RULE(S) OVER REGULATION: THE MAKING OF WATER REFORMS AND REGULATORY CULTURES IN MAHARASHTRA, INDIA

Shilpi Srivastava

Thesis submitted for the degree of Doctor of Philosophy

University of Sussex
October 2014

UNIVERSITY OF SUSSEX
SHILPI SRIVASTAVA
PhD DEVELOPMENT STUDIES

RULE(S) OVER REGULATION: THE MAKING OF WATER REFORMS AND REGULATORY CULTURES IN MAHARASHTRA, INDIA

SUMMARY

This research focuses on how water sector reforms are unfolding in the state of Maharashtra, India. In 2005, Maharashtra launched an ambitious reform programme with support from the World Bank to establish an independent water regulator and make water user associations mandatory for water delivery in the state. The establishment of the regulator, the first of its kind in the Indian water sector, invited much attention from policy makers and civil society organisations after which several Indian states followed Maharashtra's footsteps. Celebrated for its 'independent' and 'apolitical' virtues, this model of regulation was designed to provide answers to inefficiency and political opportunism in the water sector. What gained immense traction in the regulatory discourse was the concept of entitlements and the possibility of introducing water markets for 'efficient' pricing and distribution of water. To date, however, this reform project has faced reversals, limitations and subversions which have been described as 'evolution' by pro-reformers and 'failures' by the resisting groups.

This thesis shows how a seemingly 'apolitical' initiative aimed to dilute the authority of the State in the water sector is subverted to shape and reinforce its control. Though the idea of independent water regulator is increasingly getting mainstreamed into water policy discourses in India, divergent framings and rationales have made regulation a deeply contested political process. In Maharashtra, the turf war between politicians, the water resources department and the water regulator coupled with cases of corporate water grab lie at the heart of rule-making for regulation. This has made the authority of the water regulator and the meaning of regulation ambiguous and blurred. This ambiguity in turn shapes the distribution of water entitlements. In the sugarcane belt of Western Maharashtra where farmers access water from different sources, entitlements are shaped by persistent inequities in water distribution. They take on different meanings as they are subsumed into struggles over water control between the irrigation officials and the farmers on one hand, and amongst different groups of the farmers on the other. This struggle over meanings and practices across the reform process constitutes what I call "regulatory cultures" in this thesis.

Using anthropological methods to study policy processes, this work shows how water regulation is discursively shaped and becomes a deeply political practice embedded in networks of power. These networks are formed at the intersection of donors, different layers of irrigation bureaucracy, water user associations and

prosperous sugarcane farmers. I argue that the architecture of the Indian State, embedded in these very networks, is central to understanding the politics and practice of water regulation in Maharashtra.

For my parents

and

teachers

Acknowledgements

Doing this PhD has been an extremely challenging yet adventurous journey. Flashback to 2010, and here I was in the UK, venturing out of my home country for the first time. And today, I look back and appreciate those countless intellectual and personal debts that I have accumulated over these years. A daunting task indeed and I regret any omissions. To begin with, I would like to thank my supervisors, Jeremy Allouche and Lyla Mehta for their unstinting support during the course of this PhD. Their support has extended much beyond the necessary intellectual inputs, from which I have benefitted immensely. They have been my personal and intellectual mentors throughout this process. In particular, I want to thank them for their warmth, care and support through the several phases of illness that I encountered during this PhD. For this, I will always be in their debt. I also want to thank my first academic mentor, Navroz K. Dubash, for encouraging me to "spread my wings and soar into the skies". The ideas for this PhD germinated in one of his classes and he encouraged me to pursue it confidently.

I gratefully acknowledge the financial help received from the Commonwealth Scholarship Commission (UK), which made it possible to pursue my PhD in the UK. I am also grateful to Angela Dowman at IDS for her meticulous administrative support. The staff at the BLDS Library ensured timely access of books and journals. Thanks to Karen Butcher who received countless book loan requests from me and made sure that I got them in time.

The field study undertaken as part of this PhD would have been an impossible task had it not been for the generous time, help and hospitality of so many people. My knowledge about Maharashtra, before this field work, was quite akin to a tourist visiting the cities of Mumbai and Pune. Clearly, this time the task at hand was quite different. I wish to thank Prof. Philippe Cullet who was extremely instrumental in opening the doors of the policy bureaucracy in Maharashtra. Many thanks to all the government officers who took time out from their busy schedules and work commitments for our discussions during fieldwork. Since most of my respondents wish to remain anonymous, I cannot name them in person. However, I do want to gratefully acknowledge the help received from Mr. Suresh V. Sodal, Dr. Sanjay Belsare, Mr. D.R. Joshi and Mr.M.I Shaikh for ensuring my access to several respondents and places, which otherwise would have been out of bounds. Mr. Sekhar Arunachalam passed away when I returned to the UK after completing the fieldwork. He always wanted to see the final thesis. To him, I am grateful for providing me the first lessons on water policy and regulation in Maharashtra. I would also like to thank the senior officials and staff at the MWRRA office in Mumbai for their help and hospitality. It is here that I received useful advice and help in accessing government documents.

In Jahot(where the local level fieldwork was done), I would like to thank the staff at the division office, for their help and hospitality. From cooking less spicy food to ensuring my safety at the guest house, these people truly went out of their way to ensure my well-being. For this, I will always be grateful. It was always refreshing to meet friends in the evening after the long hours of field study. Thanks to Rani for introducing me to the chilli effect in the Marathi cuisine and to Ram for our interesting evening discussions on the politics in Maharashtra. I extend my sincere gratitude to all those residents of Jahot, whom I met during the course of fieldwork. They welcomed me into their houses, fields and lives with warmth and affection. I hope that I have provided a fair representation to their worlds in this study.

For research guidance during fieldwork, I thank: Joy and Seema Kulkarni from SOPPECOM; Prof. Subodh Wagle, Sachin Warghade and Mandar Sathe from Prayas; Bharat Kaware from the Samaj Parivartan Kendra (Nasik); and Prof. Pradeep Purandhare (Aurangabad). They liberally provided their time, gave valuable leads, and shared their research material, which have been extremely useful for this study. I also thank the staff members of the MWRRA library (Mumbai), Dhananjayrao Gadgil Library (GIPE, Pune) for allowing me to access their collection. Ravi Pomane, Sikandar Attar and Sachin Bhopal provided research assistance during fieldwork and for transcription of interviews. I thank them for their help.

This research has benefitted from the intellectual and generous support of several academics. Priya Sangameswaran, Philippe Cullet and Bronwen Morgan provided useful comments on my research proposal. Their insights kept me academically grounded whilst I prepared for fieldwork. Priya graciously shared manuscripts of her forthcoming (and now published) work on water reforms in Maharashtra. I really appreciate her kindness. A preliminary analysis of this work was also presented at IDS in a work-in-progress seminar (July 2013). Ian Scoones, Alan Nicol, Deepta Chopra, Jim Sumberg, Adrian Ely, Melissa Leach and Synne Movik provided valuable feedback which helped me sharpen my analysis as I prepared for the final phase of writing up the thesis. I thank them all.

My friends across two continents have provided the necessary emotional and intellectual scaffolding to keep me going. I was fortunate to be welcomed into a budding community of PhD researchers, working on water related issues, in my first year of PhD. I thank Phemo Kgomotso, Maria Teresa Armijos, Katharina Welle and Tim Karpouzoglou for their friendships and for easing me into the life of a PhD student at IDS. Though they all completed their PhDs before I returned from fieldwork, they have continued to provide valuable insights and wealth of advice during the writing up of this thesis. I have missed having them around. Thanks to Ricardo Santos, Ana Solorzano, Juan Loera, Machiko Tsubura, Tamahi Kato, Jennifer Pollex, Titiksha Shukla, Wenching Ting, Pin Hsien, Cemre Erciyes, Roxana Mihaila, Eric Kasper and Inka Barnett for their support and love.

They gave me confidence in times when I lost faith. I thank Mujtaba Piracha, Eric Manga, Yashodhan Ghorpade, Sven James and Xiao- Jia for keeping the humour alive in dark times. I have been fortunate to have friends as Tuli, Sneha, Sumathi and Shannu di who have been my reservoirs of strength for so many years. Awantika and Namrata ensured that I never miss on the bigger picture of life. Each of them have encouraged and supported me. I am deeply grateful to all of them.

My decision of doing a PhD was a difficult call for my family, especially for my parents, as it extended the fourteen years of my absenteeism by an additional four. I thank them for their understanding and patience, and above all for believing in me and letting me carve my path of life. My father, a civil engineer himself, has constantly wondered about my PhD work in the water sector. We start from two different positions when it comes to water, but this diversity has helped me to acknowledge, appreciate and understand the positionality of several officials whom I interviewed during fieldwork. He also helped me in understanding the technical issues of field irrigation when I lost my way. Thank you, Papa. In the fourteen months of fieldwork, my life circulated around Mumbai, Pune, Jahot and Delhi. I was always fortunate to have my family, *di* and *jijaji*, *bhaiya* and *bhabhi*, Nidhi *di* and Animesh *jijaji* in those rough times. Accustomed to my peripatetic status, they have loved me and endured my frustrations and mindless rumblings with patience. Getting back to the love and warmth of home has inspired me to write up and finish!

The PhD, for me, has been a transformative experience. It has given me a wealth of experience, and some very good friendships, both in India and the UK. In Jahot, people often asked why I decided to come so far away from home, to pursue this research. They called it our shared destiny or *bhagya*. Having spent my childhood around rivers, dams and barrages, and staying in the irrigation colonies, I had scarcely known then that someday, this would all become the focus of my study. These experiences have only strengthened my belief in the interconnected processes of life and I have learnt to appreciate these more than ever.

Contents

Acronyms

CADA	Command Area Development Authority
CAS	Country Assistance Strategy
CCA	Culturable Command Area
CERC	Central Electricity Regulatory Commission
CI	Canal Inspector
CLA	Canal Level Association
DLA	Distributary Level Association
DY	Distributary
EA	Electricity Act
GATS	General Agreement of Trade in Services
GoI	Government of India
GoM	Government of Maharashtra
HPC	High Power Committee
IIC	Indian Irrigation Commission
IMF	International Monetary Fund
IMT	Irrigation Management Transfer
IRA	Independent Regulatory Agency
LBC	Left Bank Canal
MERC	Maharashtra Electricity Regulatory Commission
MLA	Member of Legislative Assembly
MMISFA	Maharashtra Management of Irrigation Systems by Farmers Act
MoU	Memorandum of Understanding
MoWR	Ministry of Water Resources
MWRRA	Maharashtra Water Resources Regulatory Authority
MWRRAA	Maharashtra Water Resources Regulatory Authority Act
MWSIP	Maharashtra Water Sector Improvement Project

O&M	Operation and Maintenance
PAD	Project Appraisal Document
PIL	Public Interest Litigation
PIM	Participatory Irrigation Management
PLA	Project Level Association
PPMU	Project Preparation and Management Unit
RBA	River Basin Agency
SE	Superintending Engineer
SWP	State Water Policy
TCM	Thousand Cubic Metres
WCRC	Water Charges Review Committee
WRD	Water Resource Department
WUA	Water User Association

List of figures

1. Introduction: The Promise of Water Regulation

Maharashtra has *pioneered* [emphasis mine] in the establishment of a water resources regulatory authority [MWRRA]. The authority would regulate sectoral allocation, water rates, changes in water use/diversion of water use and compensation for such changes in water use.

The Financial Express, 10 October, 2005

When a state enacts a law with the specific objective of facilitating and ensuring "judicious, equitable and sustainable management, allocation and utilisation of water resources", it is time to sit up and take notice. When the state in question is Maharashtra, with its long history of struggles and campaigns around equity and justice, then one is even more interested.

Shripad Dharmadhikary, India Together, 23 May, 2007

"The Maharashtra Water Resources Regulatory Authority (MWRRA) is not needed any more," said Radhakrishna Vikhe Patil, Minister for Agriculture and Marketing […] Recently, a bill was passed in the state Assembly to amend the MWRRA Act […], effectively stripping the MWRRA of all its powers.

The Indian Express, 24 April, 2011

Introduction

Between 2005 and 2011, the Maharashtra Water Resources Regulatory Authority (MWRRA) had generated euphoria, scepticism and charged debates across the country. Besides being the first 'independent' water sector regulator in the country, it was its 'promise' of water markets and tradable entitlements which made reform enthusiasts and sceptics alike sit up and take notice. But by 2011, in the wake of an amendment to the Regulatory Act, this model of regulation, which was celebrated by the World Bank and national bodies such as the Finance Commission (Government of India, 2009) as a model for emulation, seemed to be falling apart. In a roundtable consultation that I attended in Mumbai in April 2011, days after the amendment to the Regulatory Act was passed, doubts persisted over the very existence and relevance of the water regulator in Maharashtra. This scepticism was as real in the minds of the civil society actors who tried to block this legislation between 2003 and 2005 as it was for the MWRRA officials in Mumbai, who read in the amendment the "fizzling out" of the Regulator (KI22)[1].

[1] Please see appendix 11.2 for the list of key individual (KI) interviewees

The MWRRA is the institutional manifestation of a particular understanding of water regulation ensconced in neoliberal principles in the water sector. The chief aim is to make the water resources sector commercially viable by opening it to private sector participation and mimicking market-like conditions by unbundling its services. As part of this institutional restructuring, an 'independent' water regulator needs to be established to promote efficient pricing and check political opportunism in the water sector. Alongside these changes, the water bureaucracies are to be downsized and transformed into professional service agencies, and a client-based relationship is to be established with 'consumers' and norms of standardisation of service set. This reformist enterprise subscribes to the principles of efficiency and full cost recovery, and regulation is portrayed as the magic wand (by the government and the World Bank) to set things right in the water sector. But regulating a distinct and multifaceted resource such as water is a challenging task. What happens when 'apolitical' regulation is applied to an intensely political resource such as water? What does regulating water entail? Is regulation merely about pricing and measuring water? Or is it about legitimising water diversions from agriculture to industry and bringing discipline to the irrigation sector? How are discourses of regulation constructed, rationalised and contested in this process? And how does its emergence revise the lines of authority that have developed over time in the Indian water sector? These issues are the focus of this work.

This thesis examines the evolution of water regulation reform in Maharashtra, India. It examines the discourses and practices that have shaped the water regulation reform, and analyses how they do so. Through a policy process study of the regulation reform, this thesis will show that water regulation is multifaceted in nature and is not restricted to the narrow role of an economic tool for pricing and cost recovery. It is 'constructed' and 'rationalised' in different ways, and it assumes different meanings for different actors involved in the process. For example, to a water resources engineer in Maharashtra, regulation means enforcing volumetric pricing of water, an exercise made intensely technical in nature with a primary emphasis on gauges and structures. But for farmers at the tail-end of the canal system, who are made into consumers through this regulation reform, it means a guaranteed water supply to irrigate the *jowar*

(sorghum) crop, more control over water rotations in a system dominated by the sugarcane barons, and more water for cultivating sugarcane. For the World Bank, the principal architect of the regulation reform, regulation means ensuring efficiency in water use through scientific pricing of water and enforceable water rights which can be amenable to trading. For some civil society activists, regulation means checking illegal water diversions from agriculture to water-guzzling thermal power plants and industrial zones. It also means extending the mandate of water rights to include rights to livelihood for the marginalised and landless population.

Regulation thus assumes different meanings as it travels from the precincts of the World Bank to the farmers in Maharashtra who cannot be grouped into a homogeneous set of consumers. In this sense, although independent regulatory agencies are taken as the entry point to this study on water regulation, I argue that they highlight only one aspect of the regulatory process. Regulation in Maharashtra is the culmination of interaction between various domains that cross sectors and social and economic spaces that are central to water control and its regulation. These include donors, the national bodies responsible for water resources, the Maharashtra Water Resources Department (WRD, henceforth the Department), the MWRRA, the civil society actors, and farmers. These actors are internally heterogeneous and their interactions are embedded in underlying relations of power, which leads to different meanings and practices of regulation. These constitute the diverse patterns of rules on water and around water. It is these interactions and rules that constitute the regulatory cultures in this work.

This work therefore analyses the unfolding of water regulation in Maharashtra through a multi-sited study that traces the evolution of regulation across different scales (central, state and local) and a diversity of settings (irrigation bureaucracy, civil society and water user committees). These interactions are embedded in particular dynamics of power defined through the relationship between politicians, the water resources department, donors, large business corporations, sugarcane barons and small and large farmers. This thesis is not designed as an evaluation of reforms, but it looks at the practice of making reforms and the

fluidity of concepts and practices which create the regulatory cultures in Maharashtra.

1.1 Study area and research objectives

The primary focus of this study is the water regulatory framework in Maharashtra. This is the first state to have introduced a water resources regulator, the Maharashtra Water Resources Regulatory Authority (MWRRA)[2], in 2005. As in other parts of the country, the water sector in Maharashtra is witnessing a series of changes by way of reforms. These include the shift from supply-driven schemes to demand-driven schemes in the rural and urban drinking water sector, with its emphasis on concepts such as efficiency and self-sufficiency. In the irrigation sector, reforms have been introduced by way of Participatory Irrigation Management (PIM) and Irrigation Management Transfer (IMT), privatisation of the water supply, the establishment of a regulatory authority, and the formalisation of water entitlements. While IMT (irrigation) and privatisation (water supply) reforms are under way in other Indian states (see Mollinga et al., 2004; Madhav, 2007; Shah, 2008; Coelho, 2010; Ranganathan, 2010; Walters, 2013), it is the establishment of the water regulatory authority and the water entitlements regime that make Maharashtra a model for reform-led regulation in the country (Sangameswaran, 2009a).

The Indian state of Maharashtra is the second largest in India in terms of population and the third largest in terms of the area (Government of Maharashtra, 2002). It is the most industrialised, the second most urbanised, and judged by the per capita income, the third richest state in the country (ibid). Although the economy of Maharashtra is dominated by the secondary and tertiary sectors, 45.1 percent of the total workforce in the state still depends on agriculture and allied activities (Government of Maharashtra, 2011a). Given this predominance of agriculture, and the demands of high industrialisation and rapid urbanisation, the water sector in Maharashtra is facing immense challenges. The impending threat of water 'scarcity' has been used consistently to advocate for reforms (discussed further in Chapter 5 and 6) in the state. Despite being home to one half of India's dams (Sodal, 2007), the state suffers from persistent problems of inequity in

[2] At the time of fieldwork, this was the only Indian state with a functional regulatory body.

distribution of water due to geographical reasons and unequal distribution of power (Sangameswaran, 2009b). Maharashtra was reputed to be the only state in the country (as in 2011) to have accorded high allocation priority to industry over agriculture in its state water policy[3].

This water situation is further complicated by the presence of a large and politically mobilised sugarcane lobby that represents the interests of the sugarcane industry (Lele, 1990; Livemint, 2011). Maharashtra, which is one of the largest producers of sugar in the country, has sustained this status due to the complex history of cultivating a perennial irrigation crop such as sugarcane in the semi-arid and drought-prone topography of Western Maharashtra. This necessarily has involved a great deal of political dynamism and entrepreneurship in the state, where political fortunes and development ambitions are inevitably tied to use of, access to and control of water (Rosenthal, 1974; Sathe, 1986). A rapidly industrialising and urbanising state with a politically strong sugarcane lobby puts water at the centre of Maharashtra's politics. How then is 'independent' regulation shaped by such diverse and contested geographies of power?

In Maharashtra, the unfolding of the regulatory model started in 2005 under the aegis of the World Bank-aided Maharashtra Water Sector Improvement Project (MWSIP). This reform package was instrumental in institutionalising independent regulation to address the problems of inefficiency and political opportunism in the "loss making and cost incurring" water sector (KI02, KI20). The tools for this restructuring were tariffs and entitlements. These were to be set by an independent body operating at arm's length from the Executive, i.e. the Water Resources Department. Prior to these reforms, the Department was responsible for setting and collecting water tariffs, and delivering water. With the setting up of the MWRRA, a certain decoupling of the roles was envisaged. The Department was now to be the water service provider and the MWRRA would take up the role of setting tariffs and monitoring the standard of water delivery. The 2005 Act also designated some of the sensitive decisions of regulating water use across sectors as vital functions of the MWRRA. To this end, it provided for

[3] The Policy was amended in the light of the 2011 amendment to the MWRRA Act, and now accords second priority to irrigation. I discuss the implications of this change in Chapters 6 and 7.

entitlements to water, which were described as rights to use water, or usurfructuary rights (Government of Maharashtra, 2005b).

The MWRRA Act (2005) defined entitlement as an authorisation given by the a River Basin Agency (RBA) to use water (Government of Maharashtra, 2005b). These entitlements existed as use rights and were to be fixed and enforced by the Regulator[4] and the RBAs[5]. The Regulator was also authorised to fix, regulate and enforce entitlements governed by the sections of the MWRRA Act (Government of Maharashtra, 2005b). The 2005 Act was also accompanied by the Maharashtra Management of Irrigation Systems by Farmers Act (MMISFA), which in principle is an Act for Irrigation Management Transfer. Bulk water consumers in the form of the WUAs were to be created, which could then eventually trade water entitlements amongst themselves and also across sectors i.e with industry and drinking water utilities. These two Acts constituted the regulatory framework in the state of Maharashtra from 2005 onwards. This promise of water was envisaged as a response to the looming spectre of scarcity and water crises with rapid urbanisation and mounting intersectoral conflicts in the state of Maharashtra (Government of Maharashtra, 2005c; World Bank, 2005).

This study examines the evolution of this water regulatory framework in Maharashtra. It examines how the regulatory discourse is constructed, and how it is practised in the state. It specifically examines the interaction of three levels of discourse formation and practice: national (macro), state (meso) and project level (micro). The project-level work is based on the Left Bank Canal of the Jahot irrigation project in Western Maharashtra. This was also one of the first six pilot cases chosen for the implementation of the entitlement programme in 2007. The Jahot project is located in the heart of the sugarcane economy of Ahmadnagar district in Western Maharashtra.

[4] In this work, I have used MWRRA and Regulator interchangeably.

[5] The establishment of River Basin Agencies was also one of the institutional commitments mentioned in the MWSIP document. At at the end of my fieldwork, the RBAs had still not been established. Thus the Regulator played a predominant role in the fixing and enforcement of entitlements. This is discussed in Chapter 6. The MWSIP closed in March 2014 and the RBAs were not established in Maharashtra until then.

Although this study looks at the construction of regulatory discourse at several levels of the reform process, the regulatory tool of entitlements become the focus for analysing the practice of regulation. In Maharashtra, entitlements became the pivot for articulation of the regulation reform. Since they came wrapped up in a donor-led reform package, they have also created polarising discourses of efficiency based on market principles, and judicious and equitable allocation of water. Moreover the politics of the amendment chiefly targeted this regulatory tool of the MWRRA. This thesis therefore analyses how different versions of entitlements affect the practice of water regulation in Maharashtra. I will show that these divergent framings shape not only the particularities of regulatory discourse and intervention, but make entitlements the very site for the articulation of the rule of the State.

This work uses different theoretical streams, with an underlying focus on power, to understand regulation both as a discursive process and as an embedded practice. Using a combination of methodological tools to study policy processes, this thesis shows that politics of regulation is articulated through different frames and practices, which are shaped by the social, historical and political context that has evolved over time in the water sector. It focuses on the underlying power relations that are constituted across this process, and also on how the State is constituted through these power relations. This thesis specifically seeks:

- to understand how water regulation is discursively constructed at the national and state levels;
- to examine the institutional, political and historical alignments that shape the regulatory discourse in Maharashtra;
- to analyse how different actors ‘construct’ regulation in Maharashtra and how they compete for power in doing so;
- to understand the interaction of the emerging regulatory discourse with the prevailing practices of water management in the localised settings of the water project; and
- to examine how the State is constituted in this discourse and practice of water regulation.

1.2 Background to research: motivation and points of departure

This study on water regulation is an intrinsic part of my academic and personal interest. As an MPhil student in an Indian university[6], I conducted research on the rural drinking water reform programme in India, *Swajaldhara*. I observed how ideas such as 'community, 'participation' and 'cost recovery' are shaped by underlying relations of power in two villages of rural Uttar Pradesh. What was striking even then was how these ideas were shaped and contested across the policy process (see Srivastava, 2012). My interest therefore encompasses two sets of issues: how interventions such as these act upon the ideas, lives and motivations of different sets of actors including the programmers and officials, and not just the 'beneficiaries'; and as a political sociologist, I am also interested in exploring what these reforms do to prevailing lines of authority, especially the State.

By the time I completed my MPhil degree in 2010, independent regulation had emerged as another buzzword on the horizon of Indian water sector reforms. Despite an emerging set of studies that have found that neoliberal water reforms have had haphazard results in other parts of the world (Bakker, 2010; 2013) as well as in the Indian context (see for instance Coelho, 2010; Ranganathan, 2010; Walters, 2013; Sangameswaran, 2014), it is intriguing to see that new terms and new programmes continue to be proposed in this sector consistent with the broad neoliberal trends.

I follow Harvey's (2007) understanding of neoliberalism as those political economic practices which propose that human well-being can best be advanced by the maximisation of entrepreneurial freedoms within an institutional framework characterised by private property, individual liberty and a free market. Using the Foucauldian understanding of power, I will argue – in this work – that at the heart of the neoliberal water reforms is a certain rationale for improving the lives of the population based on the logic of market principles. However these rationales are not ahistorical and rather use history and prevalent practices as a trope to derive legitimacy. For example, this thesis will show how demand

[6] The Centre for the Study of Law and Governance, Jawaharlal University (New Delhi).

management of water, volumetric pricing and constitution of user groups, which guide the current practice of reforms, were also an intrinsic part of the colonial intervention in irrigation, which centralised the powers of the State (Chapter 5). In the reformist discourse, these very ideas have become tropes to legitimise and contest reforms.

Another pertinent example of this discursive practice is the narrative of scarcity. In several parts of the world, the spectre of looming scarcity has been used to initiate large scale restructuring in the water sector by way of reforms (Movik 2012; Bakker, 2003; Finger and Allouche, 2002). Arguing along similar lines, this thesis will also show how scarcity has been the guiding premise for introduction of the water regulation reform in Maharashtra (Chapters 4 and 6). For example at the heart of the entitlement regime, is a process of water use allocation based on market based principles (Chapter 6) with the underlying belief that with such mechanism water will gravitate to high value and efficient uses. However as this thesis will demonstrate that scarcity is neither absolute nor limited to the bio- physical aspects. It is produced, manufactured and reproduced through social, political and historical practices (chapters 5, 7 and 8). For instance, the cultivation of a water guzzling crop such as sugarcane was part of the famine mitigation strategy in colonial times. However this intensification of sugarcane cultivation in the drought prone regions of Maharashtra is at the heart of the water (mis)allocation in the state (Chapter 7 and 8). Therefore the focus of this work is on those practices and discourses "that are layering up one upon the next and intersecting with other processes" (Li, 2007: 3) to shape the water regulation reform.

I study independent regulation as a particular aspect of the neoliberal water sector reforms in India, as a specific subset of what Li (2007) calls the "will to improve" which generates a scheme of framings, labels, calculations and technologies to achieve a desired set of results. Reforms are those particular technologies of rules aimed at the betterment of "men and things" (Foucault, 1991) and thus require that human conduct be governed by certain calculated means. This necessarily involves questions of power and knowledge. However, as this study will show, these new rules come into close encounters with other discourses and practices

that are part of the institutional and social landscape of the Indian water sector. It is these discursive and material interactions which are the focus of this work.

I begin this study from the premise that the effect of neoliberal reforms can be heterogeneous (Larner, 2003; Ekers and Loftus, 2008). The focus, therefore, is on the geographically and historically contingent nature of practices rather than on a uniform metanarrative of neoliberalism (Bakker, 2005; Castree, 2005). In her work on privatization of water supply in England and Wales, Karen Bakker illustrates how this neoliberal reform has actually led to re-regulation of environmental management, water supply industry and consumers. This has "entailed an expansion of state and regulatory oversight in the water sector" (Bakker, 2003: 15).

The current wave of water reforms in India have also been contextualised within the broad process of neoliberalism. They are read as attempts to extend market principles to the water domain (Sangameswaran, 2009a; Urs and Whittell, 2009; Coelho, 2010; Cullet et al., 2010; Madhav, 2010; Walters, 2013). Others such as Mollinga (2005) interpret water reforms as part of the nature of political democracy in India alongside neoliberal trends. The focus of this burgeoning literature operates at two levels. The first is the macro context of policy making and implications for law making (Iyer, 2009; Cullet et al., 2010); the second set focuses on the micro context of implementation and practices (Narain, 2003; Coelho, 2004; Narayanamoorthy and Deshpande, 2005; Raju and Gulati, 2008; Shah, 2008; Ranganathan, 2010; Walters, 2013). There is limited understanding of how these reforms are articulated in meso processes and across processes (Mollinga, 2005; Asthana, 2009; Mollinga et al., 2010). As a critical ethnography of policy, this study examines the regulation reform by bringing together the analytics of discourse and practice. Through the study of 'independent' water regulation reform, this work adds to the limited but emerging literature on policy process studies of water sector reforms in India, more conspicuously looking at the heterogeneous effects of neoliberalism in the Indian water sector.

Independent regulatory institutions as a distinct mechanism of governance are of recent origin and have a marked presence in American and West European systems. Independent regulators are those 'specialised law backed agencies'

(Majone, 1994) operating at arm's length from government, insulated from daily political pressures, which embed their decisions in technical expertise (Yeung, 2010). In India, the initiation of independent regulation as a governance mechanism is more a result of policy transfer and diffusion from the North than a domestic concept (Dubash, 2008). Consistent with neoliberal trends, these independent regulators are being promoted by national government and international donors alike as an 'efficient' and 'apolitical' solution to problems of political opportunism, 'adhocism' and inefficiency in public sectors[7]. However, there is little discussion about how these discourses of efficiency and political opportunism are necessarily constructed and rationalised in this big push for regulation. This study therefore examines what concepts such as 'independent' and 'apolitical' mean in the regulatory discourse, and questions whether they are necessarily static throughout the reform process in the water sector.

Independent regulation is an emerging and relatively understudied phenomenon in India (Dubash, 2008). Moreover the studies on regulation reform, so far, have been confined to utility sectors (see Mukherji, 2004; Dubash, 2013), and water sector regulation is the first – and still emerging – case of a resource regulator. Unlike the UK and other European countries where regulation has succeeded privatisation (Bakker, 2005), in the Indian water sector this trajectory remains unclear. I locate the emergence of independent regulatory institutions in neoliberalized forms of governance, which promote commercialization and market based allocation of water resources. However throughout this thesis, I will provide empirical evidence to highlight this ambiguity about the objectives and path of water regulation in India. One of the fundamental reasons for this ambiguity, I will argue, is the distinct nature of water as a good and its boundary blurring properties (Baviskar, 2007). This refers to the very capacity of water to transcend sites, levels, and social and political actors, and the different frames in which water is perceived as a public good (Petrella, 2001), as a community good (Wade, 1989; Ostrom, 1990) and as a basic human right (Barlow and Clarke, 2003; Mehta, 2006).

[7] For example, in their analysis of the global data set, Jordana et al. (2009: 4) show how regulatory agencies have been diffused as the "appropriate model of governance" across countries and sectors.

These multidimensional characteristics distinguish water from other public goods such as electricity or telecommunications. These have, as I will show in Chapter 4 and Chapter 6, influenced water regulation, but such comparisons are limited in nature because regulating water entails regulating several rule-based spheres. For example, in the Jahot system where I studied the practice of entitlements, water regulation and its practices of management were strongly bound to the political and social significance of sugar cooperatives. Thus water pricing and recovery measures came to be closely aligned to the running of sugar cooperatives (Chapters 5, 7 and 8). I also noticed that farmers in the Jahot system attached different significance to the canal water in different seasons. For the head-end farmers who have access to various sources of water, canal irrigation is a means to recharge their wells. On the other hand, tail-end farmers who rely on canal irrigation as their primary source of water also see it as source of livelihood activities during times of scarcity. Therefore regulation of water has to take into account the wider set of social networks, underlying power relations, and political relationships, and the value and meanings attached to water. These in turn determine the practices and rules through which water is distributed (cf. Mosse, 2003).

In this work, I argue that the emergence of regulators in the Indian context is the result of policy diffusion from the Global North (OECD countries). Though the Northern context is riddled with specific complexities and historical contingencies (see Vogel, 1996), independent regulation has gained salience as an institutional apparatus nevertheless. In the Global Southern context, however, these need to be located in the institutional complexity of developing countries where the borders of state authority and distinction of roles are far more porous and amorphous (Dubash and Morgan, 2013b), and even more so – as I argue – in the context of water.

This therefore requires an examination of the relationship between the State and water. This relationship has long been established in two disciplinary trajectories. In his classic work, *Oriental Despotism*, Wittfogel (1957) established a strong relationship between hydraulic structures and water control by the State. Taking this line of thought, writers such as Worster (1985) showed how control over

water resources can lead to concentration of power with the bureaucratic and technocratic elite (also see Ramamurthy, 1995). This understanding was fundamentally challenged through studies that analysed more decentralised mechanisms of water management, thus arguing that power may not be centred in the State after all (see Agarwal and Narain, 1989; Lansing, 1991; Vani, 2009). Therefore this analytical divide also led to the emergence of a certain dichotomy of state vs. community. In many ways, the current trend of neoliberal reforms in the water sector also reinforces this polarised relationship. Aimed at the "hollowing out" of the State (Rhodes 1997 cited in Leach et al., 2007: 12), reformist prescriptions often take a romanticised view of the community, positioning it as the 'other' of the 'corrupt and inefficient State' (Briscoe and Malik, 2007). This study does not treat these categories as static and unchangeable (Mosse, 2003), and argues that both the community and the State are constituted in diverse ways, and at times also constitute each other. For example, Chapters 7 and 8 will illustrate how the State acted as a midwife to bring communities into existence and defined their boundaries of work. Another limitation within this literature on the State and water is its overemphasis on the role of bureaucracy as the State. This work also examines how the State functions in the water sector, and how it is relationally constituted through various encounters, such as those between the canal officer and the farmer, the legislature and the water regulator, the Department and the water regulator and even through the reformist narratives of the donors.

By providing specificities of the water regulatory regime in India, this work builds on the regulation literature in the Southern contexts (Hsueh, 2011; Dubash and Morgan, 2013a). It analyses how this neoliberal project of reform-led regulation, articulating a certain idea of the State, gets interlocked with the existing discourses and practices across the policy process. I argue that these reformist and regulatory interventions exist as layered practices over sediments of organisational and cultural practices that are defining features of the Indian State in the water sector.

This study shows that independent water regulation has emerged as part of larger package of neoliberal water reforms in India and, specifically, Maharashtra. It

argues that at the heart of this prescription of regulation is the revision of the lines and authority of the State in the Indian water sector. From a narrow understanding of cost recovery and efficient pricing, regulation has become the very ground for expanding and reinforcing the powers of the State. This may be through framing regulation in divergent ways, legitimising water grabs, or governing the water user associations through techniques that reinforce the power of the State. Reform-led regulation is thus discursively shaped and increasingly being subsumed into discourses of State and State power. As a consequence, it eventually becomes a contested practice embedded in various networks of power. The primary reason for this water control, as I will argue in this thesis, lies in the way in which the State is constituted and operates throughout the water reform process.

1.3 Thesis Plan

Chapter 2 outlines the conceptual framework for the study, with its central focus on the Foucauldian understanding of diffused power. Chapter 3 builds on this conceptual framework and provides the methodological scaffolding that has guided this research. I further outline and identify my approach as one of policy ethnography, where I study regulation through three interconnected processes: regulation as texts, regulation as discourse and regulation as practice. Chapter 4 focuses on the national level as the domain of discourse production. I describe the contextual, structural and political economic factors that have led to the emergence of the regulatory discourse in India, in specific relation to water. I analyse the divergent discourses emerging from different actors at the national level, underlining the points of convergence and departure.

In Chapter 5, the focus of the study shifts from the national level to the state of Maharashtra. With a historical review from the late 19th century, this chapter demonstrates the many shades of regulation that pre-date the reform period. It also locates certain discourses and practices, which provide plural lenses to analyse the current practice of regulation in the state. Chapter 6 describes the current discourse of reform-led regulation in the state of Maharashtra. The focus is on the emerging regulatory framework in Maharashtra. Here I analyse the interactions between the various state-level actors such as the Water Resources Department, the MWRRA, the legislature, and the civil society actors who are

shaping water regulation in Maharashtra. From this chapter onwards, I concentrate my attention further to the regulatory tool of entitlements, which is the key subject of investigation at the local level.

Chapter 7 moves further down into the water system of the Left Bank Canal of the Jahot system in Ahmadnagar district. The primary focus of this chapter is to understand and unpack the different rules that exist vis-à-vis entitlements. Here, I analyse how the notion of entitlements is understood, subsumed and reinforced when consumers are created through the WUAs, and how this process is embedded in the complex power dynamics of the Jahot canal system. In Chapter 8, I extend these observations through a detailed observation of the process of calculation and distribution of entitlements in a particular tail-end WUA, in a village which I call Uzalgaon. Here I analyse the practice of entitlements, and show how the farmer-bureaucracy interactions shape the distribution of entitlements. Chapter 9 draws the discussion on water regulation to a close by analysing the critical process of rule-making through these reforms. As a reflective and critical author, I also engage with the possible ways forward and make a case for a diffused and dynamic understanding of regulation through regulatory cultures.

1.4 Setting boundaries: scope and limitations

As is evident from the thesis outline, this study tries to cover a vast ground, for it crosses different, dispersed yet interlinked domains of the regulatory process. Given the breadth of this work, certain caveats are in order. First, this study is not an ethnographic study of Participatory Irrigation Management or Irrigation Management Transfer policy. Furthermore, canal irrigation is not the central focus of this study. Since reform-led regulation is a diffused process, the thesis does try to engage, at several points, with issues and debates in the expansive and rich literature on these topics, but a thorough examination of these works is beyond its scope. The guiding premise of this work is to understand the emergence and practice of water regulation reform from a policy process perspective. The study does examine WUAs as sites for regulation reform but does not aim to investigate the reasons and motivations for common property resources management.

In this work, there is limited discussion on aspects of corruption and rent-seeking in the water sector. This is not to dispute that corruption could veritably be one of drivers for shaping water regulation. However, research with corruption as the primary focus would demand a different kind of research strategy in order to address issues of gaining access to records and practices. I have therefore limited my understanding to the responses of my interviewees and triangulated this data. Besides the practical limitations in studying corruption in the water sector, I concur with Lele's (2000) argument that reducing the study of the water sector and State to arguments about corruption and rent-seeking may circumvent other possible ways of understanding the State and practices in the water sector. Therefore the emphasis of this work is on those 'other' practices that constitute water regulation.

As a study of independent regulation, this work focuses on the regulatory tool of entitlements as opposed to tariffs. Tariffs are undoubtedly another key function of the regulatory authority, but issues of access and my disciplinary approach have limited this analysis. By 2010, MWRRA had already conducted its first round of tariff consultation. A second round of consultation was scheduled during the course of fieldwork, but was postponed due to the drought situation in Maharashtra in 2012. I have therefore chosen to focus on entitlements as a tool to study water regulation in Maharashtra.

Regulation, as a subject of study, transcends several disciplines such as economics, law, sociology and political science. In this thesis, I have adopted an anthropological lens to study water regulation reform as opposed to taking a strictly economic or legal approach. Moreover, this study also departs from a traditional ethnographic approach that focuses on a temporally and geographically bound field. Therefore certain field explorations were limited due to factors of time and space. For instance, I do not explore, in detail, the groundwater economy of the Jahot canal system. Since entitlements were calculated and distributed only for the canal water, this work does not examine the other sources in detail. Nevertheless, I do analyse these aspects where they cut across the making of regulation in the Jahot system. This certainly is an assignment for future work, to be pursued with rigour and interest.

2. Theoretical Streams of Enquiry

Introduction

This study analyses the emergence of independent regulation as the most recent subset of water sector reforms in India. Water sector reforms, as I have argued in the previous chapter, are often read synonymously with neoliberalism as their strategies are imbued with the market ethos of commodification, privatisation, contracts and audit culture, but the effects of neoliberalism are neither consistent nor homogenous (cf. Larner, 2000). This work locates the water regulation reform under these 'incoherent' effects of neoliberalism and argues that such reforms reinforce the control and centrality of the State in the Indian water sector.

In the previous chapter, I laid out my personal and academic motivations for pursuing this study. The objective of this chapter is to gain the interpretive lens to analyse the empirical chapters that follow. This chapter is divided into three sections. After situating this study in the broad literature of regulation (section 2.1), I argue that the current emergence of independent regulation is a feature of two conjoined processes: the regulatory state and roll-out neoliberalism. I then move further to develop the conceptual framework that guides my study (section 2.2). Here, I locate my thesis in the broad field of power, keeping the dispersed and intangible effects of power in focus. I highlight three key ways in which I use this framework in the study, through the concepts of discourse, decentred regulation and the State. This theoretical constellation also helps me develop the idea of regulatory cultures (section 2.3) with which I conclude this discussion.

2.1 Situating regulation

Some form of regulation is central to every social order (Hancher and Moran, 1989a), and the State represents one of the significant forms of regulation in modern times. Baldwin and Cave (1999) offer three ways to define regulation: rules that guide social behaviour; direct State intervention to influence market; and all forms of social control. Regulatory reform, in the context of independent regulators, can be traced back to State-initiated reform efforts in the U.S. during the Progressive Era of the late 19th century, followed by the New Deal package of reform, recovery and relief. These initiatives were characterised by State-directed

intervention to improve market performance and in the public interest[8]. State regulation moved into economic as well as social spheres, and the strengthening of the welfare state in these advanced economies was also dotted with state-based regulation (see Glaeser and Shleifer, 2003). Intervention therefore became the concomitant of regulation in this era.

However, in recent times, it is the regulatory failure of the State – whereby excess regulation may be counterproductive to economic welfare (Parker and Kirkpatrick, 2002) – that has become the focus of studies on regulation (Majone, 1997). This understanding has also coincided with the neoliberal forms of governance, which underline the reduced role of the State. Post-development scholars such as Pick and Tickell (2002) make a distinction between roll-back and roll-out neoliberalism. While roll-back neoliberalism marks the retreat of the welfare State (in Northern contexts) or developmental State (in Southern contexts), the characteristic feature of roll-out neoliberalism is that it reshapes the State to complement the market in particular ways. This shift is marked by a gradual movement from the "active destruction and discredition of the Keynesian welfare state to the purposeful construction and consolidation of neoliberalized state forms, governance and regulatory relations" (Peck and Tickell, 2002: 384). This study locates the emergence of independent regulators at this convergence of neoliberal reforms and (supposed) regulatory failure of the State. Before I discuss this convergence through the phenomenon of the regulatory State, it will be useful to elaborate the different perspectives to understand regulation.

Regulation, as a field of enquiry, cuts across disciplines of economics, political science, international relations, law and sociology. These disciplinary streams offer different hypotheses and causal factors for the emergence and sustenance of regulation. This literature is vast, and what I present here is a very small subset useful to contextualise this study. Morgan and Yeung (2007) provide three broad trends for reading regulation, i.e. the Public Interest theories, the Private Interest

[8] Market failures may result from economies of scale or information asymmetries whereby state intervention is deemed necessary to regulate markets (see Akerlof, 1970; Parker and Kirkpatrick, 2002).

theories and the Institutionalist theories. These clusters are not neat categories but represent different views across the spectrum of this literature.

The Public Interest theories view regulation as a process to correct market failures, control monopolies and serve the common good. For instance, Chang (1997: 204) defines economic regulation as "the government activity that is intended to affect directly the behaviours of private sector agents in order to align them with public interests". By correcting market failures, enhancing the efficiency-based ways of deciding what shall be produced, directing how resources shall be allocated in the production process and to whom the resources shall be distributed (Ogus, 1996), regulation, according to this line of thought, promotes public interest.

This Public Interest can also be articulated in terms of non-economic purposes. Sunstein (1990), for example, outlines other social values or non-economic substantive goals that justify regulatory intervention. These may be redistribution, collective desires, diverse experiences, social subordination, endogenous preferences and the interests of future generations. Besides being prescriptive in nature, the Public Interest Theories grapple with the difficulty of what constitutes the public interest, and thereby whose interest regulation represents. Moreover they tend to assume that the regulating authority will be a neutral arbiter, and will serve the interests of the public (Noll, 1985; Morgan and Yeung, 2007; Dubash, 2008; Zwanenberg et al., 2011).

The Private Interest theories fill this gap by arguing that regulation emerges from the actions of individuals or groups motivated to maximise their self-interest, and that any connection between the regulatory interest and public interest is merely contingent. Regulatory capture happens when officials within the regulatory institutions, who are charged with promoting the collective welfare, develop such close relations with those whom they regulate that they promote the narrow interests of this group rather than the interests of the community at large (Morgan and Yeung, 2007). In his analysis, Stigler (1971) concludes that regulatory capture is more likely to reflect the policy preferences of powerful and narrowly focused interest groups, and as a consequence generates net social loss. By using

regulation, industry or groups of industries either manage to win benefits and subsidies or prevent the entry of other firms into the market (Stigler, 1971).

Alternatively, regulation may also be amenable to political capture, whereby regulatory goals are distorted to pursue political ends (Stiglitz, 1998; Parker and Kirkpatrick, 2002). Drawing its strength from the theory of group interests, this body of work treats institutions as an economy in which the relevant actors, including ordinary citizens, legislators, agencies and organised group interests, exchange regulatory goods on the basis of demand and supply (Croley, 1998). This perspective shares interesting similarities with the rational choice perspective that Gilardi (2003) puts forth to understand the rise of independent regulatory agencies. The rational choice perspective states that actors are utility maximisers whose behavior is shaped and constrained by institutions that are defined as the rules of the game (North, 1990). Institutions, therefore, are a result of deliberative design and their shape is determined by the benefits that they can provide to the relevant actors. Regulation through IRAs, according to Gilardi (2003), is a manipulation of interests by the politicians to address issues of political credibility and political uncertainty resulting from unsecured tenures. Prosser (1999; 2005), however, is critical of such capture theories, which presume a sort of bilateral or contractual relationship between the regulated and the regulator. As an alternative he argues for a stakeholder approach where the regulator exists in a web of relationships with plural actors and thus private interests may be balanced out to reach some sort of public interest in the end.

The Public and Private Interest theories on regulation represent two distinct positions: the ‘good’ regulation in the ‘public’ interest and regulation under siege from group-based interests respectively. In terms of the regulatory process, they highlight a narrow but bilateral relationship between the regulated and the regulator (Prosser, 1999). Moreover, they are preoccupied with regulatory outcomes of either public interest or private gains, and pay limited attention to how these ends are constituted, i.e. the process of regulation.

Though Public and Private Interest theories are largely actor-centric, it is the Institutionalist theories that have emphasised the importance of contexts in determining regulation and provide a room for a process-based view of

regulation. This body of work underlines the importance of rule-based spheres, or the relationship between different rule-based spheres, as crucial to the emergence of regulation. Examples of rule-based spheres are regulatory agencies, corporations and States as well as embedded norms and routines or political, economic or legal systems (Hancher and Moran, 1989b; Black, 2002; Morgan and Yeung, 2007). From systems analysis (Tuebner, 1988) to using ideas of deliberative democracy in responsive regulation (see Braithwaite, 2006), the theories within this cluster largely subscribe to the idea that institutional dynamics *has a life of its own,* such that it often shapes the regulatory outcomes in surprising ways. Besides, avoiding a position of extremes of 'naïve regulator' or 'regulatory capture', through the institutionalist lens, regulation is read as a deeply contested process of power. It does not downplay the importance of public interest or the possibility of regulatory capture, but argues that such relations are among the many ways in which regulatory decisions are made and outcomes achieved. For example, Hancher and Moran (1989) in their concept of regulatory space (described later in this chapter) reject the capture theory on the grounds that it creates 'false dichotomies' between the State and society. They argue that -

> Economic regulation under advanced capitalism is therefore best conceived as an activity occurring in economies where the public and the private are characteristically mixed […]in this world the language of regulatory capture is devoid of meaning [...] different institutions have come to inhabit a common regulatory space (Hancher and Moran, 1989b: 276).

In this study, I use the idea of the regulatory space to understand and unpack the water reform regulation. However, one must note that these theoretical streams also emerged with the Northern context in mind, and are more concerned with regulatory outcomes, regulatory bargaining and regulatory decision-making. There is limited discussion on the question of framing of regulation, and how diverse framings can potentially shape outcomes and decision-making (Black, 2002; Zwanenberg et al., 2011). In this work, I contrast the different frames that are put forth by regulatory actors to justify regulation and will show how plural framings of regulation are determined by the embedded positions of the actors. This eventually shapes the politics and practice of regulation in the water sector.

2.1.1 The rise of the regulatory state

Independent regulators emerged as particular institutional creatures to check excessive regulation by the State. An offshoot of the New Public Management

discourse, they are often associated with the concept of the regulatory state (Majone, 1997). The central idea of the regulatory state is premised on the distinction between the executive and regulatory functions of the State, whereby the State is entrusted to perform the steering and rowing functions rather than the providing and distributing functions (Braithwaite et al., 2007), Majone writes:

> The failure of regulation by public ownership explains the shift to an alternative mode of control whereby public utilities and other industries that are deemed to affect the public interest are left in the private hands, but are subject to rules developed and enforced by specialised agencies (Majone, 1997: 144).

This shift from direct to "indirect or proxy government" (Seidman & Gilmour cited in Majone 1994: 146) is also marked by certain internal changes such as administrative decentralisation and regionalisation, breaking up of monolithic entities into specialised units, delegation of service delivery to private actors or to bodies operating outside of the executive department, competitive tendering and contractual arrangements for services. However, Majone cautions us that this government by proxy is also a government by regulation, administered through tighter procedures concerning contracts. Thus deregulation becomes the concomitant of re-regulation in discreet ways (Vogel, 1996; Finger and Allouche, 2002; Hsueh, 2011).

In this context scholars such as Vogel (1996) and Finger and Allouche (2002) studying deregulation in Europe in the 90s as well as Hsueh (2011) in her recent study of the Chinese regulatory state have argued that free markets have in effect led to more rules. This transformation has been most salient in the case of Northern countries and has reached the developing countries of the South through the diffusion of sectoral reforms (Levi-Faur, 2005; Dubash, 2008; Dubash, 2013).

The corpus of literature elaborated so far shows the trajectory of regulation in the North with specific emphasis on the phenomenon of the regulatory state. Though there is an overemphasis of European and American experiences in much of the regulation literature, there is an increasing emphasis on studying regulation, embedding it in the institutional context (Hancher and Moran, 1989a; Levy and Spiller, 1994; Vogel, 1996; Parker and Kirkpatrick, 2002; Jordana and Levi-Faur, 2004), which refers to the capacities of the State, the organisational endowments and the interaction between different organisational actors. This literature however, presupposes a certain idea of the State: a division between regulator and

service provider functions (Majone, 1994; Moran, 2002): a boundary which can be extremely amorphous in the context of states in the South.

It is in this light that Dubash and Morgan (2013b) situate the regulatory state of the South in three corresponding features or the shared context of 'the South': the prominence of donor agencies as significant actors in diffusion; the politics of redistribution; and limited State capacity signalled through budget and staffing constraints and the particular attributes of the developmental state. By arguing that States in the South may exist between hard rules and soft negotiations, they point towards a more embedded role for the Regulatory State of the South. This study adopts this perspective and takes this view as the entry point for the analysis of water regulation in India. Using this line of enquiry, this work asks: how is regulation framed by different actors in this process? Is there one or many discourses of regulation? What are the specificities of the emerging State? How does power operate in the regulatory process? I examine in detail the different rationalities that constitute reform-led regulation and how they are locked into struggle over meanings and authority among the actors.

There are three fundamental arguments which drive this study of regulation. First, I argue that power is decentred and dissipated across spaces, practices and actors. Second, in this decentred context, the regulatory process is also about power and the contest among actors, which is unequal. It is not a neutral arena, but rather one which has differential access to power (Hancher and Moran, 1989b). Third, this perspective on power also helps me build an ascending view of the State, i.e. constituted relationally rather than as a fixed entity.

2.2 Studying water regulation reform: towards a decentred analysis of power

This thesis takes a position on power in its most fluid, fragmented and dispersed form, which is unitary in neither its source nor its strategies. Power is characterised as "an effect of a myriad of relations, and not something that can be held" (Ekers and Loftus, 2008: 700). In this regard, the Foucauldian understanding of power as circulating through the social body (Ekers and Loftus, 2008) is extremely useful. Foucault's engagement with power focused on understanding the strategies of power rather than defining power itself. He

attributed centrality to its relational aspects, such as action upon the "action of others" (Foucault, 1982: 793), or what is famously understood as the governmentality or the *conduct of the conduct* (Foucault, 1991). Governmentality, or the art of government, explained Foucault was an -

> ensemble formed by institutions, procedures, analyses, reflections, the calculations and tactics that allow the exercise of this very specific albeit complex form of power, which has its target as population, as its principal form of knowledge political economy, and the essential technical means of security (Foucault 1991:102).

In this sense, Foucault's central concern was how specific subjectivities are performed, which is the 'how' of the government, and this placed knowledge at the center of his conception of power and the constitution of social relations. Critical of Althusser's formulation of ideology, Foucault took power away from the realm of ideas and introduced a strong connection between knowledge, power and subjectification, to consider the micro-techniques of power that must be challenged as part of the broader political project (Ekers and Loftus, 2008). He emphasised that government is a method for "the right disposition of things" rather than something to be invested in some institutional form (Mitchell, 2006).

Using this framework, several studies have deconstructed the category of development (Ferguson, 1990; Escobar, 1995; Agarwal, 2005) and framed it as "dominant problematic, a powerful interpretive grid through which reality is rendered knowable and categories defined" (Coelho, 2004: 25). Though they emphasise the project of development as a totalising discourse, their work misses the grey areas of subversive practices that comprise the protests, provocations or even resilience of certain communities. Thus the Foucauldian notion of governmentality is more useful in portraying development as a project of governmentality than describing how this fragile operation could be (Coelho, 2004; Li, 2007)[9]. For instance, the analytic of governmentality may not explain instances of such subversion when farmers in tail-end villages break measuring devices for water, or field officials acting down the line cooperate with them to do so (Chapters 7 and 8). Nor may it explain instances where the objects of

[9] This has also motivated recent scholarship on water reforms to use a governmentality framework alongside Gramsci's concept of social power, most notably his concept of hegemony. (For example, see Coelho, 2004; Li, 2007; Ekers and Loftus, 2008; Ranganathan, 2010).

governmentality do not possess uniform characteristics and thus may require "multiple techniques of administration" (Chatterjee, 2004: 36).

A different line of enquiry therefore conforms to the 'agency from below' perspective. This is reflected in the works that alert us to the 'devious, dispersed and subversive practices' against the strategies imposed by the ruling order (de Certeau, 1984). This subversion and resistance is defined as the hidden transcripts, or "the weapons of the weak" in Scott's work (1990). The resistance framework privileges the agency of the actors/subjects but does not sufficiently answer how this agency, through 'jokes, gossiping and laughing', impinges on the development programme.

However the dominance-resistance framework may not be useful in understanding the nuances of the policy process where outcomes are generally a mixture of unintended consequences of the process (Mosse, 2005). Thus technologies of rule will depend on the manner in which they are interpreted and put to work by lower-level government officials, elected representatives and others (Fuller and Harris, 2001). This drives us to the attribute of translation: how concepts and ideas are interpreted and made sense of. Latour defines the concept of translation thus: "in its material and linguistic connotations, it refers to all the displacements through other actors whose mediation is indispensable for any action to occur" (Latour, 1999: 399).

Following this line of argument, this work looks at the polytheistic practices that represent power through outright resistance, everyday practices of subversion, discursive struggles, compromises, translations and collaborations that derail the reforms from their 'intended' course of action. This study critically looks at the circulation of power through "socio-hydraulic landscapes in a decentralized and taken for granted manner" (Ekers and Loftus, 2008: 700). It follows Foucauldian understanding as far as its illustration of power and its strategies for producing subjects. However, it is also alert to the limits of a totalising discourse and therefore particularly looks at the discursive construction at several levels of the policy, which may account for the limits to totality.

It highlights the moment of hybridity of subjectivities that make space for discipline, resistance, contestation and co-production, highlighting the power of

the State in subtle ways. In the next sections, I highlight three key concepts which guide my analysis and constitute the regulatory cultures in this study. These concepts do not emanate from a particular framework, and this theoretical eclecticism is also an attempt to understand the complexity in the Indian water sector which defies being fitted into a singular theoretical framework.

2.2.1 Knowledge as power: policy as a discourse

The guiding premise of discourse analysis is that policies are neither value-neutral nor ahistorical (Shore and Wright, 1997): they emerge in the particular nested context of government programs and in a discrete political, economic and historical setting (Rein and Schön, 1993). Policies therefore are inherently political and it is imperative to understand how particular wisdoms are created through those policies, and how certain cultures, practices and expertise become authoritative (Keeley and Scoones, 2003).

In this study, discourse is understood in two ways. One: following a post-structural understanding, discourse is a particular way of "thinking and knowing which involves the political activity of naming and classifying" (Sutton, 1999: 6). In this classic Foucauldian understanding, policies become political technologies that conceal the operations of power through objective and neutral idioms (Shore and Wright, 1997: 8). The second dimension reflects the argumentative turn in policy, which privileges the role of language in the operation of power and construction of subjectivities (Fischer and Forester, 1993). Focusing on aspects of language and semiotics, the second definition of discourse pertains to dialogue, conversation or communication related to practices of framing, labelling, coding or numbering (Apthorpe, 1996). Fischer explains this centrality of language as:

> […] how language and modes of representation both enable and constrain their [policy makers'] work, how their practical rhetoric depicts and selects, describes and characterizes, includes and excludes, and more (Fischer and Forester, 1993: 2)

To define problematic and render the field intelligible for intervention is one of the central thrusts of the governmentality argument. (Rabinow, 1991). Scott's (1998) representation of the high modern and his classic example of cartographic domination by the State are illustrative of this dynamics of visuality and intervention. However, discourse is not merely a form of representation but also makes power operative in discrete ways. It deconstructs the structured political

interests and ideologies which form part of the larger power/knowledge phenomenon. Foucault argues:

> What makes power hold good, what makes it accepted is simply the fact that it doesn't only weigh on us as a force that says no, but that it traverses and produces things, it induces pleasure, forms of knowledge, produces discourse. It needs to be considered as a productive network (Rabinow, 1991: 61).

Knowledge is constructed through categories and frames or systems of meanings that are relationally constituted (Haugaard, 2002). One of the fundamental functions of this knowledge-power phenomenon is to problematise issues and make them amenable for intervention (Li, 2007). Thus, policies are significant in drawing the contours for this operation of power, especially so through frames and narratives.

Narratives and framings: the power to define

To render 'things' governable is to frame an ill-defined, problematic situation, argue Rein and Schön (1993) as they reinforce the practice of problematisation. In their illustration of frame, policies become "a way of selecting, organizing, interpreting and making sense of a complex reality" (Rein and Schön, 1993: 146); they highlight the lived realities and constructions of people, communities and groups. These practices are political as they as lead to closures of options and alternatives, to certain ideas becoming 'truths' in the discourse or to analysing the 'mobilization of bias' (Bachrach and Baratz, 1962) that excludes and includes issues within the agenda of decision-making. For example, in chapter 4, I show how independent regulation is projected as a remedy to rescue the loss-making water sector. The 'failing State' rhetoric framed in the language of corruption and oversized bureaucracy is used to justify an intervention which is expert-led and outside of the State.

The significance of framing is illustrated by Hajer (1993), who takes language to be "a medium, a system of signification through which actors not simply describe but create the world" (Hajer, 1993: 44). This is useful in unpacking how certain relations of dominance are structured and reproduced. He refers to the social construct of political problems through discourse analysis and argues that these constructs do not emerge in a historical vacuum but are produced through discourses. Therefore language does not merely become a way to define complex

problems but is also instrumental in labelling or developing selective categorisations such as ‘rural poor’, ‘uninformed citizens’, ‘target groups’ that are under-descriptive and disempowering as well (Sutton, 1999; Fairhead and Leach, 2003). Frames represent particular world views and also become justifications for regulatory interventions (Zwanenberg et al., 2011).

Discourses are often entrenched in certain narratives or storylines, which policymakers and their critics use to articulate and make sense of uncertainty, complexity, and polarisation (Roe, 1994). They provide a set of diagnoses for complex problems, thus making them amenable to intervention. These narratives, though highly subjective (Kaplan, 1993), have the force to construct and highlight the lived realities of people.

These narratives often rest on certain iconic facts or mobilising metaphors (Shore and Wright, 1997; Keeley and Scoones, 2003; Mosse, 2005) such as desertification (Fairhead and Leach, 1996), acid rain (Hajer, 1995), scarcity (Mehta, 2005) and generate multiple - and often contradictory – stories. For example, within the water sector, the scarcity narrative has assumed a hegemonic hold usually mobilised through very powerful metaphors of water wars and water crises. This narrative is to a great extent responsible for the discourse of Integrated Water Resources Management, which is the underlying inspiration for water sector reforms across the world. This discourse rides on powerful metaphors of efficiency and equity emanating from particular systems of knowledge based on market and private property rights (see for instance:Movik, 2012).

These mobilising metaphors and narratives reinforce and privilege a particular kind of knowledge, especially scientific knowledge. In this regard, expertise and epistemic communities play a central role, which invariably turns political problems into technical solutions and supplants the “everyday, less sophisticated” (Fischer, 1993: 22) opinions of the common citizen with arguments designed and legitimated in the language of technical discourse, based on scientific decision-making techniques. As a result of this change, the political demands are converted into technically defined ends that can be pursued through administrative means (Fischer, 1993). For instance, Chatterjee (1998), studying developmental planning

in the early decades of post-independence India, argues that the emergence of the Planning Commission as a non-elected body was essentially aimed at short-circuiting the political debate on key questions of development. Likewise Li (2007) reiterates the depoliticising effects of technical discourses whereby "questions which are rendered technical are simultaneously rendered non-political" (Li, 2007: 7). This therefore takes policy away from the realm of politics, to a more technical and administrative domain.

This understanding is also central to the debate on regulation of water. In theory, regulation is couched in the language of law and economic arguments of efficiency (Chapter 4 and 5), but they have a concomitant effect on the everyday practices of farmers (as shown in chapter 7) who capture these technical discourses and make them people's discourses. Thus understanding regulation as a discourse offers useful insights into the meaning and coordination of social practices, the construction of identities, the practices of framing and labelling, the relationship of knowledge, language and power and the malleability of social construction (Black, 2002). I use this lens to see how the multiple definitions of regulations that are embedded in powerful - and often contradictory – discourses of water managerialism, State and water control are created, constructed and rationalised. Chapter 4 illustrates the moment in time and history that led to the genesis and acceptance of regulation discourse in India. However, as the succeeding chapters will show, there are several discourses of water regulation across the national, state and village levels and therefore discourse structuration - how a particular discourse gains ascendancy – becomes the dominant theme for Chapter 6. These contests for power and authority, to provide meaning, occur in distinct regulatory spaces, which are spaces of uneven power and therefore deeply contested.

2.2.2 Decentering formal regulation: regulatory space and the contest for power

Power, within the regulatory arena, is described as a process of "enlisting cooperation of chains of actors who 'translate' power from one locale to another. The process entails activity on the part of the 'subjects of power' and it builds into the probability that outcomes will be shaped by resistance due to the private objectives of those acting down the line" (Garland, 1997: 182).

The post-regulatory (State) scholarship has emphasised the diffused nature of regulation and underlines the importance of power within the regulatory process (Braithwaite and Drahos, 2000; Black, 2001; Scott, 2004). They argue that State-centred law is not the sole repository of regulation as there are other non-state actors, especially private actors, who are no longer mere takers but also shapers of regulation (Hancher and Moran, 1989a; Morgan and Yeung, 2007). This plurality has been tapped into by the decentred concept of regulation whereby control is not just centred on the State but diffused through society as norms and practices (Black, 2001). Drawing on the Foucauldian notions of power, decentred regulation recognizes fragmentation of knowledge, power and control for "regulation occurs in many locations, in many fora; there is regulation in many rooms" (Black, 2002: 4).

Decentering regulation celebrates plurality, ungovernability and interdependence of actors. It blurs the boundary between the public and the private, and emphasizes that social problems are a result of various interacting factors. Such interactions are complex in themselves as different actors have diverse goals, intentions, purposes, norms and power thus making regulation not merely a dynamic exercise which includes (and excludes) a range of actors as the State, bureaucracy, markets and networks that occupy the regulatory space (Black, 2001). In this context the decentred notion challenges three key assumptions of the traditional regulatory paradigm. One: it asserts that the State is not the sole locus of regulatory authority. Two: it challenges the hierarchical nature of State's role and recognises multiple levels of governance which operate in overlapping ways, and not necessarily in a vertical fashion. And three: it suggests that command is not central to regulatory enforcement as there are other policy implementation techniques which are more varied, networked and diffused (Black, 2001; Zwanenberg et al., 2011; Vibert, 2014) .

Decentred regulation can also be studied through the optic of the regulatory space. Underlining the decentred nature of power, regulatory space provides the lens to study the spaces and practices of reform, and analyse how actors engage, negotiate and contest with each other (Hancher and Moran, 1989b). In the regulatory space, regulatory power and the capacity to exercise it is dispersed, fragmented and divided unevenly between actors. Unpacking the regulatory

space, Scott (2001) argues that such resources are not centred on formal, State authority derived from legislation and contracts but also includes information, wealth and organisational capacities as resources that are fragmented between state and non-state authorities. Since power is not centred on any formal authority, it indicates that regulation is a negotiated process among actors. This perspective underlines the importance of historical timing, the organisational setting and the embedded nature of the regulatory process. It highlights the "recurrent tension between the common structural forces shaping regulation in the economies, and the idiosyncrasies introduced by the unique historical, national and industrial settings" (Hancher and Moran, 1989a: 4), which impinge on questions of what constitutes regulation. Hancher and Moran state:

> […] regulatory 'issues' are in an important sense ideological constructions: their recognition depends on social actors construing the world in a particular way; their allocation to a particular arena is likewise the result of a process of ideological construction. But these acts of issue recognition and definition are underpinned by the structural forces at work in the economy (Hancher and Moran, 1989b: 297).

However, Hancher & Moran's construction of regulatory space was developed with American and European traditions of regulation in mind, i.e. regulation in advanced capitalist economies. It began with the premise of clearly defined boundaries of organisational interests, divisions of public authority and private goals, and state and non-state actors. In certain ways, their construction of regulatory space is organisation-centric, consisting of actors such as corporations and the State which are tied into a ferocious struggle over regulatory decision-making. Recent scholarship has taken the idea of regulatory space beyond the Northern contexts (Chng, 2013; Uruena, 2013) and has included a diversity of actors such as the judiciary, the private water suppliers and the NGOs in the constitution of the regulatory space.

Chapter 6 will show how the regulatory space becomes more amorphous in the context of Maharashtra. In this work, the idea of regulatory space analyses the point and moment of transplant and intervention through reforms. It relates to contestation over who has the power to regulate rather than the nature of regulatory decision-making and analysis of outcomes, as is the case in works mentioned above. Unlike the post-regulatory scholarship which operates on the

dichotomy of the State and non-State, this study emphasises that the State remains at the very centre of regulation but assumes different manifestations of collaboration, collusion, competition and control through its relationship with other actors, institutions and techniques (cf. Morgan and Yeung, 2007). These include the World Bank, the sugar cooperatives, the private power companies, the civil society actors in Maharashtra and the farmers.

What is central to the decentred – regulatory space formulation is the emphasis on embedded cultures. Vogel (1996), in his comparative study of regulatory reform in Europe and Japan, shows how political-economic institutions shape policy choices and how these choices in turn shape the institutions. This iteration and construction brings in the possibility of studying the institutional layers that are contingent on historical and cultural factors. In the next section, I locate this regulatory process in the institutional and cultural context of the State. In this study, the understanding of the State is not merely restricted to institutional sites and practices but also to certain imaginings and ideologies developed over time due to specific historical contexts which impinge on these practices.

2.2.3 The Decentred State

This study understands the State "as a dispersed ensemble of institutional practices and techniques of governance" (Hansen and Stepputat, 2001: 14), which produces certain state effects (Mitchell, 1991; Trouillot, 2001). Trouillot (2001: 126) categorises the state effects into four themes: an *isolation effect* for the production of atomised subjectivities for governance of the 'public'; *an identification effect* for realignment of subjectivities on collective lines; a *legibility effect* which is about production of knowledge and empirical tools for governance; and *a spatialisation effect* which defines the jurisdiction and boundaries of governance. Throughout this thesis, I will show how the State, through these diverse effects, operates as a central category in the operationalisation of reforms. Though reforms have principally targeted the revisions of the lines of the State authority (Chapter 4), the State continues to retain its control through ways such as making its rule legible through governing communities (Chapter 7); reinforcing its hydraulic supremacy through knowledge production (Chapter 8); and spatialising its power through the constitution of the water regulatory framework (Chapter 6).

The discussion on water reforms cannot escape the debate on the tenuous relationship of the State and neoliberalism. Reforms therefore focus on certain core functions of the State (Hansen and Stepputat, 2001), chiefly the economic functions, and should be read as an attempt to fine-tune the capacity of the State to penetrate the market, i.e. roll out neoliberalism. Therefore even the corpus of literature which emerged to debunk this myth of the powerless state (Weiss, 2012) has focused on these particular core functions of the State. In sum, central to this debate of retreat and resurrection has been the functionalist lens, i.e. the economic functions of the State. However, this perspective- I argue- is limited in understanding and reading the capacity of the State, which is to exist not merely as an instrument of governance but also as an idea with capacity to control and govern. This study departs from this functionalist reductionism and argues that the State does not exist as monolithic structure and cannot be reduced to merely functional elements of governance. It operates in multiple sites and state effects are a result of interactions between actors and practices which constantly reproduce the state (Corbridge et al., 2005; Mitchell, 2006; Sharma and Gupta, 2006; Ekers and Loftus, 2008).

In this sense, I find the distinction made by Abrams between state systems and the state-idea extremely useful. Abrams[10] defines the state system as "a palpable nexus of practice and institutional structures centered in the government" (Abrams, 1988: 58). On the other hand, the state idea is "the idea [of the State] projected, purveyed and variously believed" (ibid). Unlike Abrams' dichotomy, in this study, the Indian State represents both an idea and a system since they are mutually constitutive and reproduce each other (Mitchell, 2006). It is "protean and complex" (Harriss-White, 2004: 102). In fact, Bourdieu argues that the State possesses "cultural capital" which operates at an objective and subjective level (Bourdieu et al., 1994). The State therefore also exists as what Ferguson and Gupta (2002: 981) argue to be "powerful sites of symbolic and cultural production that are themselves […] understood in particular ways". They are

[10] In his study, Abrams notes that the State exists as a social fact and does not have a material reality. It exists as a third world object, as an ideological project (Abrams 1988: 76). He argues that the State should be studied as the construction of an idea. But Mitchell (2006) rightly points out that removing the idea from the state's existence as a system of power may present difficulties in defining the limits of this system. In this study, my attempt is not to valorise this distinction. Alternatively, I argue is that both idea and system are interlinked and tend to reproduce each other.

cultural artifacts reified through State spectacles, meetings, registers and water channels that portray the reach of the State (Gupta, 1995); these imaginings of the State form the cognitive scaffolding which has made the State a reality even in this era of 'retreat'.

The ethnographic literature on the everyday practices of the State has made a phenomenal contribution to the study of the State in understanding its intangible practices. This body of work unfolds the wry, mundane and routinised everyday practices that provide the flesh and bones to the State between villagers and bureaucracy (Gupta 1995), indigenous communities and colonial masters (Li 1999), and between indigenous communities and international donors (Li 2007). The State is constructed through a variety of ways in different contexts (Hansen, 2001; Jeffrey and Lerche, 2001; Mosse, 2003; Gupta, 2005). This literature destabilises the coherence and uniformity attributed to the study of the State and highlights its relational attributes whereby the distinctions between state/society, public/ private, state/non-state are not only blurred but are constructed afresh on an the everyday basis.

These studies have reflected on the constitution of the local State represented by street bureaucracy in great detail, but how does the State work at levels above the 'local'? Also, beyond these everyday practices that materialise the State, what are those practices and ideas that not only constitute the local but are also enmeshed in similar contestations? Here I refer to the policy-making processes, the elite bureaucrats, the engagement of donors with State officials, ministers with bureaucrats, which also construct the State in particular ways. Therefore there is a need to disassemble the State beyond everyday practices.

Corbridge et al (2005) refer to three levels of sightings of the State, or what they call "seeing the state" by poor people (both as citizens and as marginalised sections), by different line departments and different levels of bureaucracy, and the sightings made by the wider development community, including donor organisations and consultants (Corbridge et al., 2005). However their analysis of the Employment Guarantee Scheme in India largely remains circumscribed to the local state and its actors. Along a similar line, Gupta and Ferguson (2002) argue for the spatialisation of the State; their argument of translocality forcefully

stresses the construction of State practices and discourses in multiple sites, but this locality does not move 'above the local', beyond the neoliberal discourses. There seems to be a credible neglect of the meso-State in anthropological accounts: a world that exists between the neoliberal and macro actors and the street-level bureaucrats, and the distinction which Mosse (2005) captures in the unfolding of the policy process: the distinction between elite and vernacular societies (Kaviraj, 1984), where translation is at work (Latour, 1999).

Chopra (2011) takes this distinction as the point of departure in her study on policy-making on employment guarantees and focuses on four domains of policy-making: parliamentary, party, civil society and executive. She points out the dynamic process of statecraft in the policy-making arena whereby through the process of governing, "the State itself is reconstituted through the agency of those who are sought to be governed" (Chopra, 2011: 93). Chopra's conception of policy praxis as statecraft is interesting but she limits her analysis to the state system alone. However, I find the analysis of statecraft useful as it provides a constructive flexibility in so far as an iteration between the governed and the governing is concerned; it attributes reciprocity and agency in and to the contest for power which constructs and reproduces the dominance of the State as an idea and as a system.

Likewise, in his rich historical ethnography of tank irrigation in South India, Mosse (2003) shows how statecraft lay at the centre of the demise of tank irrigation. He also underlines a decentred concept of the State which subsumes the *zamindars* (aristocratic land-owners), the British Raj and the bureaucracy, as well as the politicians. Similarly Lele (2000:6) in his study of Participatory Irrigation Management challenges the monolithic conception of the State as "a rent-seeking, turf-maximising entity", and a self-serving bureaucracy and argues that this may be a fundamental oversimplification because such construction ignores the political and democratic calculations of the political arm of the government.

Therefore, in this study the State is multilayered and decentred (Mosse, 2003). It is the *shaasan* (bureaucracy) and the *sarkaar* (government). It is defined as a web of networks that runs from water channels in the fields up to the Water Resource

Department in Maharashtra and the Commissions at the national level; the State works at the local interface (a subject of ethnographic studies on water reforms) and at sub-national and intra-national levels. The State is discursively constructed in policy, in the acts of donors (Chapter 4), the dialogues of policymakers and the contestations of the civil society groups (Chapter 6), historically constructed and embedded in certain cultures and practices which tie irrigation and State formation together (Chapter 5), and also in certain imaginings and practices that create spaces of discipline and control (Chapter 8). This approach helps me to examine regulation as part of the society-wide networks of regulatory processes which remove the insularity of State regulation and highlight the distinctiveness of its role at the same time. It helps me to unpack the 'government' of regulation at several scales (policy process) and between several actors (regulatory space) and simultaneously disassemble it at several points.

2.3 Regulatory Cultures

The discussion above highlights three key points which guide this study on water regulation reform in the Indian water sector. First, power is understood to be decentred and dissipated, and this understanding is central to my analysis of reform discourses and regulatory spaces. Using this lens of fragmentation, I also unpack the understanding of regulation vis à vis the role of the Indian State. Second, this study maintains a strong focus on the context and the specific historical, political-economic and social contingencies which impinge on regulation. Third, it is these contingent factors, prevalent in the Indian context and more specifically in the context of the water sector in Maharashtra, which define the regulatory culture(s)[11] in this study.

'Culture' is a fluid category as it could mean anything from habits to institutions to everyday patterns of living. The organisational literature which subsumes a large part of the study on regulation has wisely referred to organisational cultures as they touch upon institutional contexts in which regulation is largely located. I

[11] There are clear overlaps between the concept of regulatory cultures and regulatory space because of their emphasis on regulation as a practice embedded in distinct socio-political and historical contexts. In this work, regulatory space forms a sub-set of regulatory cultures It is used as an analytical tool to explain the spaces of interaction that open up during the process of regulation reform. These are also shaped by situated positions of actors etc. The idea of regulatory cultures, however, provides a more nuanced approach to distil those structural, historical and political forces that make up for these situated positions with a strong emphasis on the importance of discourses, narratives and the diffused apparatus of the State.

widen this angle of regulation in so far as I locate these institutions in a larger social, political, historical and cultural formation. I follow Wright's understanding of culture as "a contested process of meaning making", and a product of historical and social forces, contingent on time and space (Wright, 1998: 9). Culture marks the cognitive boundaries (Douglas, 1986; Hall et al., 2000) of the regulatory purpose and regulatory objects (Meidinger, 1987). In short, what comprises regulation and its meaning-making. It marks the distinction between the politics of symbolic and technical regulation (Chapter 7) and provides legitimacy to rule-making, thus determining the path and process of translation. It also refers to the larger organisational fields (Powell and DiMaggio, 1991) and the 'messy contexts' formed at the junction of several constitutive factors through global-national-state-local interlinkages, locating each of them in the wider politics of knowledge diffusion, regional development and politics of the State in the context of water reforms. It is through this optic that the boundaries of the State become blurred "between the State and the intermediate classes, between the official State and a very large 'shadow' state, and between social identities and official state roles" (Harriss-White, 2004: 77).

The conceptual framework elaborated will be used to unpack the embedded nature of the regulatory discourse(s) and practice(s) that constitute the regulatory cultures in this study. This framework is useful to understand how reforms are shaped, contested, resisted and co-produced. The study analyses the interaction between various domains of regulation that cross sectors, social and economic spaces central to water control and its regulation. I widen the angle of regulation (Nader and Nader, 1985) to analyse some of those controlling processes, which tell the story of resistance, subversion and agency, and shaping, in sum, the elements of power in the water sector. I argue that reformist and regulatory interventions are layered over sediments of bureaucratic, clientele, organisational and cultural practices that are defining features of the Indian State in the water sector. I substantiate this argument through the empirical chapters that follow.

3. The Alchemy of Fieldwork: Methods and Positionality

Mr. Shirke (section officer): Madam, what are you doing here?
Me: Sir, I am here to study the water reforms in Maharashtra. This is the first state to adopt such reforms, you know?
(Explaining the importance of reforms and what I am trying to study)
Mr. Shirke: Is it? Yes, we have a lot of problems regarding water [after a pause]. So you are an Engineer?
Me: No, Sir.
Mr. Shirke: Economics or Law?
Me: No, Sir.
Mr. Shirke: A Science graduate? (and now he begins to wonder)
Me: No, sir.
Mr. Shirke: So what is your first degree?
Me: I am a Social Scientist with interest in water policies and reforms.
Mr. Shirke: Ohhh (shocked)…you are an Arts student! (shakes his head in disapproval).Who studies Arts[12] today? - It's Commerce or Engineering. These are tough papers. We did not know that Arts could be so tough. Perhaps in England it is! Who is paying for your survey?
(I smile)
Mr. Shirke: Ahh, so you want to look at how farmers distribute water, the 'social work' type of things?
Me: Yes, but also how you distribute water to the farmers.
Mr. Shirke: (with a sense of pride) Ahh, it's all measured at gauges and outlets. It is all Mathematics, Madam. It is these farmers and politics…they bring their [equipment] to break the canal.
Me: There must be a lot of political pressure on you during the water rotations?
Mr. Shirke: (confused) No, no…we are very clean people. We do not allow politics in water, but these farmers get their ministers and loyalists. And then there is violence...it is a tough job, madam. Not meant for a woman!

And we drive on through the canal roads of the Jahot system …

(Field Journal; March 2012)

Introduction

Several encounters with my interviewees during fieldwork echoed the sentiment of the excerpt above. For the initial months, several of my respondents within bureaucracies – and, most surprisingly, within civil society and NGOs - struggled to understand the motivation for and meaning of my doctoral project. Many of the doubts were dispelled during the course of my fieldwork as I tried to unsettle the disciplinary and gender boundaries in the water sector in Maharashtra. My methods and strategies in the field were shaped by the contingencies, contexts and, most often, by the way people viewed me. However, this attitude helped me to enter their 'thought worlds', which operated on varied assumptions about equity, power, accountability and the State. This chapter maps the 'field' in which

[12] In common parlance in India, 'Arts' refers to a degree in Social Sciences.

I was located for a span of about fourteen thirteen months (September 2011 – October 2012). This iteration shaped my work in diverse ways. While, at times, it opened otherwise closed doors, at the same time it limited my access to certain areas of action. Field data is "a construct of the process by which we acquire it" (Bellah in Strauss, 2000: xi). Before I distil this data into the interpretive grid of concepts and empirics, I outline the process which has shaped my approach (section 3.1), fieldwork (section3.2) and analysis (section 3.3) for this study.

3.1 Research design and methods

This research is designed as a multi-sited qualitative study. Qualitative research is an appropriate strategy for this kind of project because it underlines an interpretive approach, which emphasises understanding the meanings that people attach to a phenomenon (Snape and Spencer, 2003). As a multi-sited research project, this study maps the evolution of regulation across scales and a diversity of settings, from the offices of the World Bank and the Planning Commission (New Delhi) to the MWRRA and Department of Water Resources in Mumbai, to the civil society organisations scattered across Western Maharashtra (Pune, Aurangabad, Ahmadnagar, Nasik and Mumbai) and to the localised settings of the Water User Associations (WUAs) in the villages of the Jahot canal system. Given the imperatives of my study, my field moved from the "single site of location [...] to multiple sites of observation and participation that cross-cut dichotomies such as the 'local' and 'global' (Marcus, 1995: 95).

In order to follow the 'discourse and practice' of regulation which transpired through variously situated subjects, circulations of meanings, objects and identities (Appadurai, 1990; Marcus, 1995; Strauss, 2000), I adopted a policy process (Keeley and Scoones, 2003) or what Mollinga et al.(2010) have called the policy odyssey approach where the path of circulation necessarily crossed through interlinked domains of global politics, the politics of the policy making and implementation into everyday politics (Mollinga et al., 2010). This has helped me to unpack the "located nature of particular policy processes" (Keeley and Scoones, 2003: 3) and navigate through the "discontinuous contexts" (Marcus, 1995: 98) in which my respondents were located. Though I had originally planned to focus on global politics as well, I restricted this dimension to the analysis of discourses that strategically shape the path and process of

regulation in India and Maharashtra, complemented with interviews conducted in Delhi. I now outline the contours of the approach that helped me draw the "spatial canvas"(Marcus, 1995: 98) of the field of study.

3.2 Anthropology of public policy: a policy process approach

In the previous chapter, I emphasised the significance of translation in my work. In order to study the translation of regulation in wider regulatory cultures, I adopt a policy process approach to show how global knowledge tends to shape national, state and local level discourse and practice, producing at every level points of creativity and contestation (Mollinga et al., 2010). These are also embedded in complex power relationships.

For traditional anthropology, the difficulty of combining macro and micro levels within a single field of analysis has been both a methodological and theoretical issue (Shore and Wright, 1997). An anthropological approach to policy thus uncovers "the constellation of actors, activities and influences that shape the policy decisions, their implementation and results" (Wedel et al., 2005: 30) In this study, it helps to understand the working of the multiple intersecting and conflicting power structures that span the donor organisations, government departments, non-state actors, civil society organisations and WUAs that make up the layered nature of water regulation.

As a critique to the study of 'otherness' in anthropology, Nader (1972) encouraged anthropologists to study the "colonizers rather than the colonized, the culture of power rather than the culture of powerlessness, the culture of affluence rather than the culture of poverty" (Nader, 1972: 289). Inverting the gaze or 'studying up' rather than down, she argued, provides a useful lens for capturing the analytics and mechanics of power, and how these 'bounded subjects' are actually produced. Though these perspectives of studying up or down are not asymmetrical or unilinear, they ignore the fact that there is a circulation of people, meanings and assumptions across these sites. There is an additional caveat: the powerful bureaucracy or the powerful State are not one, but are constituted by several networks, which sometimes defy the proposition of up and down, and are shaped by contingent practices. The media and civil society also act as powerful vectors to mutually constitute this up-down narrative. In this

sense, Reinhold's (1994) suggestion of 'studying through' makes a useful addition. 'Studying through' emphasises how policy creates webs and relations of power between actors, institutions and discourses-

> Studying through offers insight as to what happens both within and outside a single locale. It allows space for the actual complex interdependence of multiple sites, actors, and institutions and struggles that have therefore been a mostly uncharted area in the field of anthropological knowledge (Reinhold, 1994: 478).

This is not merely a useful approach for bridging the micro-macro dialectics but also reconstructs the 'field' around these actors and activities, which may no longer remain fixed and constant in terms of geographical or social boundaries (Gupta and Ferguson, 1997). An anthropological approach, in this study, analyses the construction, production and interaction of discourses and practices, at several levels of policy, in social and political spaces articulated through systems of governance and networks of actors (Keeley and Scoones, 2003).

Alternatively, the unbound field also presents challenges of drawing the boundaries to one's study, a challenge that I faced squarely throughout my research. When I embarked on the journey to study regulation in 2011, it was still an evolving process, and 'young' by the standard of reforms. The initial three to four months were hectic and confusing. I had chosen to focus on an area where work seemed thin and debates fragmented. The literature on the Indian style of water regulation was so far limited to organisations such as SOPPECOM[13] and Prayas[14], but there was substantial focus on policy negotiations. My initial conversations with experts and bureaucrats carried mixed messages, and very few people identified with the Regulator, MWRRA. The initial interviews were marked by suspicion, with respondents referring to the MWRRA as a failure or 'an institutional layering' over what already existed in the Maharashtra water sector. These preliminary yet discouraging responses made me nervous but I took them with a pinch of salt and moved on.

[13] Society for Promoting Participative Ecosystem Management is a Pune-based non-governmental organisation working in the area of natural resources management. It is one of the leading policy level actors in Maharshtra and it is at the forefront of the grassroot movements in the water sector.

[14] Prayas is a non-governmental, non-profit organisation based in Pune. With substantial experience of work on electricity sector regulation, this organisation also coordinated several round-table discussions on water regulation across the country between 2005 and 2011. Some of its members, such as Prof. Subodh Wagle, also chaired the working group on water regulation for the 12th Five-year Plan (2011-2012).

The initial three months of soaking in, combined with a first round of interviews at the national level and short trips to project sites in Maharashtra, provided the foothold from where I began an in-depth study. For this purpose, I demarcated my field into three levels: national (Delhi), state (Mumbai) and local level (Jahot Canal), along the axes of actors and interests, discourses and institutional context. The research strategy therefore oscillated between micro and macro aspects of research, where each site built the context for the other, this is how I proceeded to 'construct my field'(Amit, 2000).

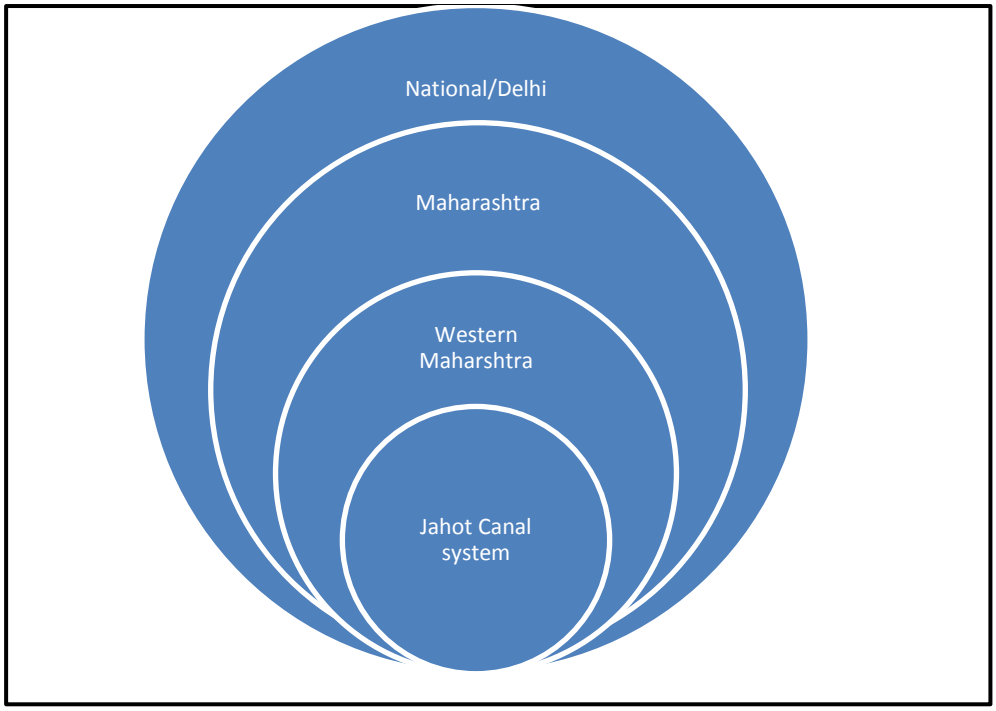

Figure 3.1: Spatial canvas of the field

This strategy had attendant trade-offs. One was that different sites required different strategies with varied foci, where I necessarily struggled to balance depth with breath. For instance, while pursuing the MWRRA amendment (Chapter 6), I was tempted to follow the case of water conflicts and illegal diversions at the micro level, but that would have meant compromising the emphasis on entitlement and regulation, which are the focus of the study. Moreover, strategic and institutional factors played a very significant role in shaping this study[15]. During the course of my fieldwork, some politically sensitive events also limited my access and affected the nature of my interaction

[15] Before I gave in to my temptations, my meetings with the officials concerned indicated that access would be hard to negotiate, especially since the case of illegal diversion (Upper Wardha controversy, Chapter 6) was then in the State High Court.

with my respondents. When I had just reshaped the strategies for fieldwork in the wake of the 2011 amendment, the Department was charged with embezzlement of funds. There followed a highly-charged political debate, with Public Interest Litigations (PILs)[16], setting up of review committees and the government bringing out the White Paper on Irrigation. For me, this also meant interviews with politicians being cancelled, and a certain amount of reticence on the part of my respondents, especially the bureaucracy. To do fieldwork in such times also meant that my study could be misinterpreted as an evaluation. Also, I could not get access to the ministers, due to the politically charged climate.

I travelled back and forth between Mumbai and Delhi, depending on the availability of the interviewees, for the first four months. The national-level interviews provided specific inroads into the policy circuits of Maharashtra. In these four months, I also realised that in Maharashtra the MWRRA had a far less discursive presence than the MMISFA, for reasons that I discuss in Chapter 6. Several key individual interviewees preferred to speak about reforms rather than specifically about regulation. Following this experience, I changed the vocabulary of my fieldwork. I began to introduce my study as a project on reforms rather than regulation. This translation is also explicit in the title of my thesis: I treat regulation as a subset of the larger discourse and practice of water reforms. In the field, my questions were most certainly directed towards the water regulator and entitlements. This shift in nomenclature was well received, as respondents began to open up and share their perspectives. This shift was also symptomatic of translations that had already occurred as water regulation shifted from Delhi to Mumbai. I discuss this further in my empirical chapters.

3.3 Carrying out the research: strategies and methods in the field

The policy process approach required a set of methods which could provide boundaries to the field. Within a few months, some of the methodological illusions set in my research proposal began to disappear. As I found it difficult to

[16] Also known as Social-Action Litigation. Indian Constitution guarantees its citizen fundamental right to constitutional remedies under Article 32 of the Constitution of India. A citizen whose fundamental right or legal right is violated has the constitutional remedy to approach the Supreme Court of India or High Court and invoke its jurisdiction for remedy. With the growing trend of Judicial activism any public spirited citizen can move/approach the court for a public cause (in the interests of the public or public welfare) by filing a petition (see Baxi, 1985).

maintain a balance between the national, state and local level fieldwork, I traded off the national with more vertical slices from Maharashtra. At the national level, I concentrated on fewer actors but ensured that I ran an in-depth analysis of texts and policy documents from various institutions. This decision was not merely based on setting the range for translations in regulation, but also on the fact that it became very difficult to 'chase' the national level actors from non-Delhi locations. For the first few months, I concentrated on Delhi/Mumbai coupled with field visits across Maharashtra. I narrowed this focus to Mumbai/Jahot in the following six months, and then returned to final policy level interviews in the last three months. This back and forth approach also gave me the elbow room to be flexible and eclectic with my approach, for triangulation and objectivity, as I moved between these sites. I followed a three tier strategy and adjusted my methods as the context demanded.

3.3.1 Studying regulation as texts and discourse

For this study, one of the first entry points to understanding regulation was the primary and secondary literature, with a focus on the national and state level. For this purpose, I conducted an in-depth document content analysis, studying reports as cultural and symbolic texts (Wetherell et al., 2001). For the first few months, I concentrated on the voluminous literature on water regulation and water reforms in India, which included reports and policies from the Government of India and the Government of Maharashtra, Project Appraisal Documents and reports from the World Bank, and publications from the Asian Development Bank. In course of time - and by virtue of having access to the MWRRA - I also obtained permission to receive several project-related documents from the Project Preparation and Implementation Unit (PPMU, Mumbai), which included aide-memoires and progress status reports on the MWSIP. I also focused on literature sources from civil society organisations such as Prayas, SOPPECOM, and GOMUKH,[17] which are active participants in the regulatory discourse at the state as well as the national level.

Accessing information from these actors became, at times, a difficult proposition, especially as I was travelling continually between sites, with intermittent internet

[17] A civil society organisation based in Pune, Maharashtra. Their main area of work is river basin management and watershed development.

access. The fact that, unlike most of the government establishments, the Government of Maharashtra does maintain an online repository of documents, was extremely heartening and helpful. I revisited and analysed these documents in the light of what I observed in the field. It was the next step, accessing specific documents that were not necessarily in the public domain, which required leg-work. For example, I tried to procure the minutes of the meeting between the Government of Maharashtra and the World Bank, as well as of the public discussions held prior to the introduction of the Act in 2005, but could not do so. I considered recourse to the Right to Information, but since I had relocated to the village site the idea was lost in the mist of fieldwork. To fill in this gap, I relied on interviews and conducted a rapid newspaper search from 2000-2005. This was extremely helpful, as the journalistic reports also provided another insight into the meaning of reforms and into constructing the idea of regulation through a discursive analysis (cf. Gupta, 1995).

However, for certain sources there really were no alternatives, and some of them required constant negotiation, which became easier as the time passed. When I started my fieldwork in 2011, I was keen to understand the nature of legislative discourse on the MWRRA Bill, and especially the amendments to it, and I asked the MWRRA and the Department for the documents. They postponed the issue month after month, but finally persistence paid off. Government documents in the public domain are hard to access at times, especially when it is difficult to ascertain where they may be housed and the path to procure them. The Secretary of MWRRA deputed a staff member to give me an introduction at the legislature's library. I spent a week in this library, studying the discussions on the Bill (2003-2005) and the Amendment Act 2011 (Chapter 6). Similarly, I also gained permission to access the minutes of the meetings and public consultations on the discussions on tariffs with the MWRRA. This, however, happened in the last two months of the fieldwork, in 2012.

These primary documents opened world views - so essential for understanding and analysing regulation - and also helped me in developing my interview schedule. These texts provided the first foothold for constructing the discourse and unpacking the underlying politics of knowledge (Chapters 4 and 6). Moreover, the process of gaining access also illuminated certain dominant

patterns of regulation, making negotiations a site of practice. I explain this in detail in the section on positionality in this chapter.

3.3.2 Moving from texts to talk: interviews and discussions

In April 2011, I attended a round-table consultation on water regulation in India, organised by TISS[18], IIT[19] (Mumbai) and Prayas. Here I had the opportunity to introduce myself as a prospective research student, and also get an overview of the main stakeholders in the regulatory discourse in India. Having very little familiarity with the waterscapes of Maharashtra, my initial strategy was to develop contacts with NGOs working in Maharashtra so that I could be introduced to the region. With this approach, I targeted three NGOs: Prayas, SOPPECOM and Gomukh. These three NGOs had three different entry points and very entrenched positions in the regulatory discourse, and their pallid responses regarding the 'ineffective' regulator were not very useful. They advised me to acquaint myself with Maharashtra first, but were not very helpful in paving the way for access. It was at this point that I decided to try another way and get access via the government.

From the time that my research proposal was approved in July 2011 to the time when I started the fieldwork in September 2011, significant changes had taken place in the regulatory landscape of the country. The Expert Regulatory Group was constituted by the Planning Commission to reconsider the model for a Water Regulatory Authority (Chapter 4). This made Maharashtra's model of 'regulation' a sought-after case in policy circles at the national level. This topical situation provided an excellent hook for me to latch onto the national policy circuit, which in turn linked me to the state circuit.

Despite having several references, I was wisely advised to take a 'neutral and objective' reference for the MWRRA. This alerted me, for the first time, to the sensitivity of the issue. Prof. Philippe Cullet from SOAS (University of London) willingly put me in touch with Mr. Suresh V. Sodal, the Secretary of the MWRRA. This contact proved to be the key link for my study in Maharashtra. From here, strategic snowballing gave me contacts with people across several different nodes in the Maharashtra policy circuit. It was through Mr. Sodal that I

[18] Tata Institute of Social Sciences, Mumbai.
[19] Indian Institute of Technology, Mumbai.

had the ‘uncommon’ opportunity to meet the top brass of the policy leadership in the state, and get access to meetings at the MWRRA. In time I became a regular visitor to the MWRRA if not a permanent fixture in the Regulator’s office. I was also allowed to access the MWRRA library to access documents. I had the opportunity to attend meetings at the MWRRA office and engage in casual conversations with the staff members, who willingly shared their experience of the water sector and reforms in Maharashtra, in their varying capacities. The staff would greet me upon my arrival, and refresh me with their insights into my fieldwork. These constant and consistent interactions also helped me to understand the dynamics and relationships between the Water Resource Department and the MWRRA and their styles of operation (Chapter 6). By December 2011, I had managed to gain entry into the policy level hierarchies in Maharashtra, and the next step was to choose a project site for the everyday politics of regulation.

I conducted 116 semi-structured interviews across policy scales ranging from New Delhi down to the canal site. This wide spectrum included key informants from the World Bank, the Planning Commission, government officials in Maharashtra and Delhi, academics, water professionals, civil society members, field level bureaucrats, local politicians, members of WUAs and the farmers. While the majority of the interviews were conducted face to face, some interviews had to be conducted over telephone or by email. This approach was complemented by observations gathered during meetings in the Regulator’s office, and at seminars and conferences organised by the government and civil society actors. I used these opportunities and available spaces for meeting stakeholders and setting up follow-up discussions. I also analyse these settings as specific sites of institutional practice that make up the regulatory culture in Maharashtra.

Figure 3.2: Farmers' meeting at Nevasa, Ahmadnagar
(December 2011)[20]

3.3.3 Studying policy through everyday practices

Besides the policy level dynamics and changes outlined in the section above, there was yet another change which required some re-thinking on my part. In my research proposal, I proposed to choose one of the six pilot sites to study entitlements in the canal system. I settled on three criteria for this purpose: (1) sites where the MWRRA piloted the entitlement; (2) the level of organisation of WUAs; and (3) the level of urbanisation and industrialisation in the district, which would showcase the competing demands for water. However, two events changed my course of action. One: by November 2011 the MWRRA had upscaled the six entitlement sites to 226, so the matrix required some re-thinking. Two: the amendment row between 2009 and 2011 changed the course of the MWRRA and the nature of entitlements, making the third criteria - competing demands - redundant for my study (Chapter 6).

After two months of searching for the appropriate local site, I realised that there is not a single site that complemented the map in my mind. Unfortunately the sites that I had in mind were based on policy documents. This was a fiction and my variables had to be tweaked and twisted, refined and polished to fit into the

[20] Unless explicitly stated, all photographs used in this thesis have been taken by the author.

realities of the field. I met with sugarcane farmers in Ahmadnagar and officials in Nasik, attended meetings for WUA formation, and visited the celebrated sites of Waghad (Nasik) and Satnur (Amravati), which have sustained their prosperity through grape cultivation and orange farming respectively. In this process, I was exposed to the cultures, practices and implicit biases of farmers, officials and NGOs, the reporting strategies of bureaucracy, the relationship between farmers and irrigation officials, and the underlying implications of regional development for the prosperous and powerful sugarcane farmers of Western Maharashtra and the cotton and paddy farmers of Vidarbha (Chapter 5). This understanding is clearly superficial in terms of thick data but the experience prepared me for unpacking and working my way through the rest of the fieldwork.

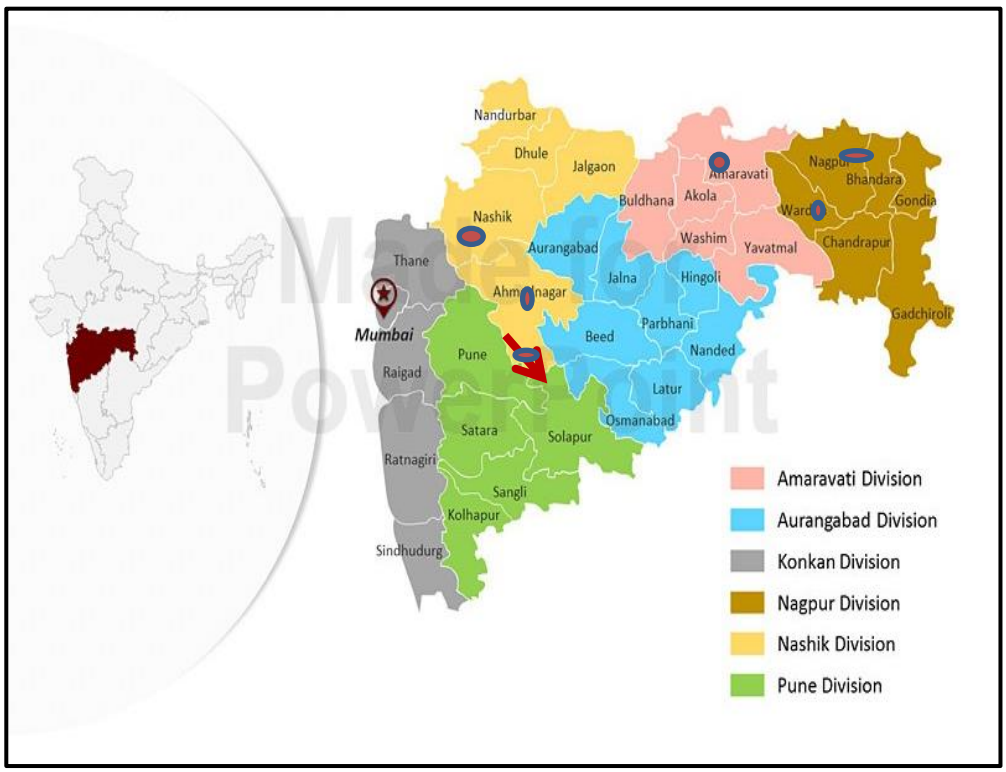

Figure 3.3: **Revenue divisions of Maharashtra with location of the Jahot system** (see the arrow) and other project sites visited during the course of fieldwork (see dots) (Source: Government of Maharashtra)

It took me two months of touring "model sites", "best sites", "good sites" and "sites where I would find good data"[21] according to the government, to arrive at

[21] The sites visited include: Waghad (Nashik); Dongargaon and Pench project (Nagpur); Satnur project (Amravati) 'and Mula project (Ahmadnagar). Jahot was chosen after a month of pilot visits across 7 sites to understand the regulatory reach of the reforms. I also visited the Kukadi

Jahot. On 17th January 2012, I finally arrived in Jahot after travelling to several other reform sites in Maharashtra. The Jahot dam comes under the Kukadi circle office, with administrative headquarters in Pune. The dam is located in Chinchani, a village in Pune district. The Jahot canal system covers the three talukas[22] of Shirur (Pune), Shrigonda and Karjat (Ahmadnagar). The right bank of the canal system flows through the Shirur taluka in Pune, and the left bank, extending to 84 kms, is covered by Shrigonda and Karjat talukas in Ahmadnagar.

The command area (area irrigated by the dam) of the Jahot system also intersects with the command area of the adjoining Kukadi canal system and several places on the Left Bank Canal (LBC). Especially in the middle and tail regions, farmers were beneficiaries of both systems. The main reasons for selection of the Jahot system were as follows: first, it was one of the first six systems to be taken into the entitlement programme in 2006/07. Second, the sugarcane economy in a drought-prone region provided a robust background for understanding the embedded nature of institutions and power dynamics[23]. Third, it was a twelve-month project providing water for two cropping seasons of *rabi* (winter cropping season) and hot weather, as opposed to some eight-month projects in Maharashtra which provided water for one cropping season. This gave me the scope to study water use patterns for two rotations (part of January, March and May rotations).

From January until May, the Jahot system was the focus of my work, interspersed with brief visits to Mumbai and Pune for interviews and collection of data. These trips were not only an opportunity to visit the city and stock up on food, but also provided me with an objective distance from the data to plan my strategy and offered space for reflection. For instance, the experience at the Jahot system prompted me to ask: what has sustained water-intensive sugarcane cultivation in a semi-arid, drought-prone region? This crop has an important bearing on the development of irrigation practices and systems in Jahot. Thus, in order to understand this process, I studied the archival resources at the Dhananjay Rao

---

project, adjacent to Jahot, during my stay there. I based my selection on the data available with the MWRRA on the implementation of entitlements.

[22] Talukas are administrative jurisdictions in a district, below the district level.

[23] This refers to the interdependent nature of the canal system, sugar cooperatives and local politics in the Jahot system.

Gadgil library, Gokhale Institute of Politics and Economics and the corresponding records available in the House of Commons (UK) e-library.

In Jahot, I spent the first month making contacts and understanding the water cultures of the Jahot system, adopting and using the language of rotations, outlets, rehabilitation, form no.7 and *dushkaal* (seasons of intense heat and dryness with no or low rainfall). The Jahot Left Bank Canal (LBC), which was my canal-level site, had 36 WUAs. Jahot was not merely divided across the primary axis of head prosperity and tail poverty: these divisions cut across political lines, sugar cooperatives and administrative jurisdictions (Chapter 7). It also showed how the vocabularies of regulation changed as the regulation reform it travelled from one locale to the other. I discuss this in detail in Chapters 7 and 8 of this thesis.

Between 2007 and 2008, ten sites in the head region were chosen under the entitlement programme, but by 2011 it was upscaled to cover the whole canal system. Based on the data gathered from the sub-division office, demographic patterns, membership of WUAs, their location and the progress of entitlement delivery, I decided to take three sites (head, middle and tail) to study and understand the water practices and dynamics of regulation. This selection was based on pilot visits, analysis of the social demography and interviews with NGOs that had previously worked on this site. The tail, and my final, site for extended observation was more a matter of serendipity than a conscious and calculated decision. For the March water rotations, when the water was being supplied to the tail region, I secured permission to accompany the Department officials on patrols. They took me to the WUA, which I have chosen to call the Jai Gauri Paani Waapar Sanstha (JGP) in Uzalgaon (name changed), where water rotations were on for the next two days. This was a tail site, with a functioning WUA, unlike the other two sites in the head and tail. From the March rotation onwards, I decided to focus my work in Uzalgaon supplemented with site visits to other two WUAs in the head (Triveni-Balaji WUA) and middle (Sangam WUA).

Figure 3.4: **Water assessments after the March rotation in the JGP WUA**
(March 2012)

Figure 3.5: **Registering water use in the JGP WUA**
(April 2012)

Figure 3.6: On patrol with field officials at Jahot
(May 2012)

In JGP, I got the opportunity to see the entitlements in action (Chapter 8). The strategy here was of both observation and participant observation. I went on patrol visits with the field level officers, accompanied Sanjay *bhau* - the canal inspector for the WUA - to farmers' fields as he carried out water assessments, attended group discussions and morning *chaupals* (community meetings), and benefited from numerous informal conversations at the Uzalgaon bus stop. In time, I was naturalised into Uzalgaon. In between sugary milk teas (during the pleasant months from January to March) and ice-cold, fresh sugarcane juice and *shikanji* (lemonade, in the summer months of March to May), I interviewed a heterogeneous set of people grouped together into water communities in the Jahot system.

I preferred to record all my interviews (with permission) and used my mobile phone for this purpose. I noticed that using a mobile phone instead of a voice recorder was a comfortable choice since my respondents were unperturbed by its presence once the interview started to flow. A mobile phone was a far more familiar and homely apparatus than a voice recorder. By mid-May, when I decided to return to policy interviews and relocated to Mumbai, I had soaked up the friendly yet intensely politicised environment of the Jahot system.

3.4 Negotiating Research: gatekeepers, ethics and positionality

The field is an intensely social experience where political choices and trade-offs are made. It is thus a mix of serendipity and constraints (Strauss, 2000) influenced by issues of positionality and access, to which I now turn. Negotiations regarding my fieldwork started from day one. For the practical constraints that I mention above (in section 3.3.2), I took the help of the MWRRA to get access and introduction to the canal-level sites. This initial breakthrough came with a trade-off with bureaucracy who acted as gatekeepers, much as Hammersley and Atkinson (1995) point to -

> Gatekeepers[…]will understandably be concerned as to the picture of the organization[...]that the ethnographer will paint, and they will have practical interests in seeing themselves and their colleagues presented in a favourable light[….] (Hammersley & Atkinson, 1995: 54).

Through these close connections, I was also exposing myself to being guided in my research. For instance, the initial field trips to the model sites, though thoroughly illuminating, also made me aware of the 'shepherding and control' issues inherent in this hospitality. In most of my visits I was accompanied by a Department official and introduced to the 'right people' for the 'right answers'. It is for this reason that my selection of Jahot was not welcomed by several bureaucrats in Mumbai, who also tried to shepherd me to the " islands of salvation" (Chambers, 1988: 49) or the model sites. I was insistent and tough in offsetting such biases and did not change my decision in the face of discouraging remarks about Jahot, such as "people are not very nice there" or "it is very remote and tough for a woman". The second big challenge came during site selection in Jahot. I realised within a month of my stay at Shrigonda that the further I was from the division office, the less would be the interference from the officials in my day-to-day work. I tried my best to secure accommodation in Uzalgaon, but I was advised better to stay at the Department guest house as it would be the safest place for a woman on her own. *People fear the shaasan* [bureaucracy] *and no one can harm you at the Inspection house!* was the repeated advice from all quarters.

While staying at the guest house subjected me to the surveillance of the field staff, it did bring some benefits. One: proximity to the office kept me abreast with all the important events and meetings - and also fights and feuds - between farmers and the Department. I could check with staff members about the dates of

rotation, or when the water was due to be released, and also witness first-hand the charged climate during water rotations. Prior to and during the rotations, vehicles lined up in front of the office and I was given instructions to stay indoors for fear of violence breaking out. Two: the guest house was equidistant from all three sites, and therefore was an ideal location to travel from. Three: it gave me some very good friendships and insider accounts of the area, the Department and the context of Jahot itself.

Since I am not a native Marathi speaker, I also hired a research assistant[24], who accompanied me during my field visits in Jahot. Initially, I hired a student from the local college, the daughter of a (irrigation) staff member, as my translator. However I realised very soon that my research was being discussed in the Shrigonda office. In order to protect my respondents, I decided to get a translator from another village, who has also helped me transcribe the interviews in Marathi.[25] Sanjay *bhau* also acted as an impromptu translator when the need arose. In time I picked up some Marathi but did not come close to sophistication and proficiency; its similarity with the Devanagari script (Hindi) made Marathi easy to comprehend but my spoken language was a howler! Mr. Sikandar Attar[26], Mr Ravindra Pomane and Mr. Sachin Bhopal[27] performed word-to-word transcriptions for me. They were from a contiguous area, aware of the context and were also social work graduates. I later triangulated the audio records with transcripts from my assistants and my own field notes.

Given my proximity to the Department and the nature of my initiation into the field, several respondents located me as a Department official. The fact that I was staying at the official guest house did not help either. I tried to distance myself from this image as far as possible. Though the officials offered to help with conveyance, I preferred to travel by bus to the village and then walk through the

[24] A Masters student in Social Work at the Pune University and a local resident of the area.

[25] Several of my respondents in the local village site were comfortable with speaking to me in Hindi (my native language). However, there were also a set of respondents who could not converse in Hindi and my RA came along to help me with these interviews. The WUA Canal inspector, *Sanjay bhau* (who was conversant in Hindi, Marathi and basic English) also provided me with great help. Since farmers did not stay in the village but in their farms which were inaccessible through roads, he took me on his motor bike to meet the farmers and also to observe the water rotations.

[27] Graduates in Social work at the Pune University and a local resident of the area.

fields to meet the farmers[28], most often getting a ride with *Sanjay bhau*. During my stay in Jahot, people were certainly confused about my status. This oscillated from being a World Bank employee to a government official or an NGO worker. Some of them felt that this "survey" (my PhD) would give me a position in the Department and I would be one of their *sahibs* (officers) in future. While the farmers expected water channels and field channels from me, the bureaucracy was initially nervous and saw me as an evaluator of their progress. I could do neither! When I explained to them that I am a researcher doing a study on WUAs and the changes in the water sector, they did not see much sense in me 'wandering around' in the fields for the purposes of my study. I had to negotiate between these imposed identities on a daily basis. In my conversations with farmers, I had to explain to them that I could not get their outlets and field channels repaired. I reassured the field bureaucracy that the data would be anonymised, and that this was not an evaluation. For purposes of confidentiality and anonymity, names - especially of government officers - have been changed. I have also changed the names of the villages, WUA sites and numbers and names of the outlets and distributaries to protect my respondents. Some respondents were comfortable with the use of their names and I have used them with their written or verbal consent.

Having said this, my presence for five months in Jahot did cause some curiosity and stirrings. For the WUAs, I became the harbinger of information as they struggled to understand the reasons for my 'mindless wanderings', whilst the bureaucracy's responses would oscillate between guarded ambivalence and honest criticism. Even beyond the precincts of Jahot, my respondents were intrigued and curious to know what I found in Jahot and in other parts of Maharashtra.

[28] In Western Maharashtra, it is difficult to meet the farmers in the village (except for the morning between 8am to 9am) since they reside in their farms. This was the furthest the bus could take me. I therefore required a motorcycle and a driver to help me. *Sanjay bhau* proved immensely helpful. He was the canal inspector of the WUA, farmer and a local resident. We arranged specific days and times for the visit, so that his schedule was not interrupted. I was uncomfortable that he would not take payment even for the petrol for his bike. I had to be very firm to make him accept my request for paying for the petrol when we travelled for long hours, and between villages. He would merely mention that he was learning through this study.

3.4.1 Hierarchies and gendered realities

My positionality in the field was influenced by my being an Indian student from a British university, a North Indian, educated, female researcher and a social scientist. While being a PhD student from a British university opened doors of access for me, especially with the bureaucrats, who went out of their way to help me, being a social scientist was an unwelcome and "shocking" revelation to a community of engineers, who initially saw me as unfit to conduct research in the water sector. I had entered into a domain of hydraulic masculinities (Zwarteveen, 2011) where my respondents portrayed their 'superiority' of knowledge, age and gender. My initial interactions with them were premised on their attitude that I needed to be "taught about water engineering". They would throw engineering jargon at me to test my knowledge.

In these initial interactions, to my surprise, my father came to my rescue. The initial introductions would be premised on my study, my *gaon* (my home and native village), my caste and my family. While they categorised my study as social work, the fact that I was the daughter of a Superintendent Engineer (SE) in the Irrigation Department in Uttar Pradesh melted some technical hearts. For others, the Class 1 officer[29] status of my father earned me respect. Initially, I was often introduced as 'the daughter of SE *sahib*', but later I did graduate to 'PhD researcher' at some point.

However, this attitude not only helped me to enter their 'world of calculations and measurements', which operates on assumptions about equity, policy and power, but also enabled me to observe how *shaasan* (bureaucracy) operates socially. It also provided me with a hands-on opportunity to understand water practices with these field practitioners. As I held my fort, with time the condescending attitude was soon replaced with very productive conversations and a sense of respect for my effort. I benefitted from the overwhelming response of the field bureaucracy who took me on patrols, and the canal inspectors who helped me "participate in" and observe water rotations.

[29] Highest in the hierarchy of public servants (1-4) in India. They are also referred to as Gazetted officers. They also have the authority to issue official stamps.

Nevertheless, there were several occasions when I would be bound by social constraints. In several spaces, in the offices or at the canal, I would be the only female person in a given space. This was initially a discomforting experience, but with time I gained confidence as well as acceptability. Being a female researcher, I had to dress appropriately and follow strict time schedules - returning home by sunset. This limited my observation of night patrols and water rotations. It is for these reasons that I could not observe in person activities related to issues of corruption, water thefts, and sabotage of the canal system during water rotations. These restricting demands were further exacerbated by the fact that I was an Indian girl, where it was assumed that I would know and adhere to the standards of 'female modesty' when it came to talking with men. I skirted jovially the questions on marriage, my career choices, and how my parents could permit me to travel alone. At times they would discuss my matrimonial prospects, bring me offers of marriage and give strict injunctions that I must find a husband when I finish my survey. I had, on a regular basis, to navigate between being an insider, being an Indian and at home, but also subjected to the boundaries of an outsider, for not being a Maharashtrian *mulgi* (girl, here woman).

I found it extremely disheartening that across so many interviews and observations, my interaction with womenfolk was marginal and peripheral. There were very few women in the policy circles, but more troublesome was the fact that even as members of the WUAs, their role was peripheral, or more as proxy candidates. It clearly showed the skewed participation and marginalisation in the masculine water sector. However, I did meet in Jahot a fiery lady, *Gangu tai*, whose spirited participation and conversation still keeps me hopeful about change. With time, I managed to sink into the organisational and water culture of Maharashtra and after a few rough months, fieldwork became an evolving experience. I was madam for field officers, *vishesh ladki* (unique girl) for village people, *foreignchi patlin*[30] for friends that I made during my stay in the village and in Shrigonda, and a daring *mulgi* (girl/woman) from Delhi for several others that I met during my countless journeys in Maharashtra.

[30] The title of a famous Marathi movie in which the protagonist, a girl from the USA, comes to a village in Maharashtra and slowly adopts the culture of the place. The similarity was especially reinforced by my Marathi pronunciation.

3.5 Towards analysis

By the end of the fieldwork, my field reports to my supervisors had begun to show the evolution of my work. Storylines had emerged which needed to be probed and intellectually challenged once I returned to the UK in October 2012 to write up the thesis. This distanced relationship with the field and movement towards analysis also involved interpreting, objectifying and textualising the data (Mosse, 2006). I used Nvivo software for data coding as I organised the data according to the themes and storylines that emerged. One of the strongest charges levelled against the use of qualitative software such as Nvivo is that the researcher may lose the possibility of reading the data in different ways. I also think that at some point, it dehumanises your field respondents, who are entered as codes and themes in the database. As researchers, it also puts us in a privileged position to interpret a reality, which we attempted to understand through our own subjective lenses.

Throughout my fieldwork, I maintained a written journal. It contains my first impressions, my own biases, and moments of serendipity and frustration encountered in the field. This always kept me close to the life of the people with whom I engaged for a period of several months, and gave me an opportunity to be reflective about my own work and interpretation. My positionality has not merely affected the process of data collection in terms of what I see and observe, but is contingent on what I understand and where I am located. Thus the interpretation is far more layered due to my partial subjectivity.

This data is mediated by the in-betweeness of understandings that arises from my hiring translators and transcribers (Rabinow, 1977; Twyman et al., 1999). Though I made my research intentions and objectives very clear to my research assistants, I also opened my work to another layer of interpretation. It is for this reason that I triangulated the transcriptions with my own field notes and first impressions. Also using my rudimentary knowledge of Marathi, I have tried to offset these biases as far as possible.

Research is also an interpretive process and my study was determined by my own positions in the field, and by the privilege of choice that I exercised when I coded my data through Nvivo for analysis and interpretation. It is the construction of

data which could tell several different stories through different vantage points, and this is the interpretation I present. This is among the many exercises of situated knowledge (Haraway, 1988) of accounts of truth open to interpretation and constructions. I now turn to the story of regulation stitched and pieced together through these multivariate axes in the subsequent chapters.

4. Framing Regulation: Constraints, Convergence and the Emergence of the Discourse

> India faces an increasingly urgent situation: Its finite and fragile water resources are stressed and depleting rapidly while various sectoral demands are growing rapidly […] significant restructuring is thus required of the institutional and financial environment in order to create the incentives to initiate a continuous and vigorous process of change […] The performance improvement approach entails achieving the devolution of operations and maintenance to lower administrative levels and user groups; financial viability and sustainability of the service agencies, more appropriate technology and information systems; and a demand- and client-orientation in the services.
>
> (World Bank 1998: i-vi)

Introduction

This growing spectre of resource scarcity has been one of the foremost drivers of water sector restructuring in India and the world for the last two decades. In India, this has unleashed several types of experiment by way of 'reforms' ranging from community participation, privatisation of water supply and irrigation management transfer under the rubric of performance 'improvement'. The latest to arrive in this cluster is the idea of independent regulation and water markets. Though the ideas of tradable entitlements and independent regulation entered the vocabulary of the water reform discourse around 2003 in India, these are particular manifestations of problems that have been discussed and debated for more than a decade in the Indian water sector (Wade, 1984; Chambers, 1988; Government of India, 1992; World Bank, 1998a). Independent regulation, therefore, is the institutional culmination of several policy processes and reform narratives (global and national) that started from 1990 onwards, some directly linked to the water sector and others, such as utility regulation, affecting its path-dependent nature.

In this chapter, I focus on these constellations of forces, which have led to the emergence of reform-led regulation in the Indian water sector. I focus on the national level as the domain of discourse production, which has successively built up the momentum for water reforms and has made regulation salient in the Indian water discourse. I argue that regulation has emerged in the context of neoliberal restructuring of the economy, and is legitimised by discourses of expert-driven and 'apolitical' institutions that can function as third parties and 'outside of the State'. In doing so, I also show the particular ways in which the State is constituted through the production of regulatory discourse at the national level.

After providing a brief context of the Indian water sector at the national level (section 4.1) I argue that the evolution of regulation can be divided into three broad phases at the national level. The first phase of regulation (1990-1998) primarily focused on core sectors of the economy, and was fundamental in creating the 'thought world' for regulation, i.e. making 'independent regulation' salient in a hitherto interventionist economy. This particular framing of regulation rested in the ideology of rolling out neoliberalism, trimming the State in ways that would complement market conditions and thus heralding private sector participation in infrastructure sectors (section 4.2). This phase created the ground conditions for the second phase of regulation (1998-2005), which focused on social sectors such as water. Bolstered by narratives and models from both within the global water sector and outside of it, the regulation encompasses several techniques for 'improvement' (section 4.3), which are based on the logic of 'efficient water pricing'. Conspicuous in this phase is the inflated role of the donors, such as the World Bank, which have emerged as the key drivers of the water regulatory discourse in India. The third and the current phase (2006 onwards) therefore takes cognisance of this donor-defined regulation. It is preoccupied with revisiting the thinking on regulation and making it a home-grown discourse (section 4.4). Though this has meant critiquing - to some extent - the 'imported models' derived from dominant narratives of neoliberal reforms, it also makes regulation driven by expertise and technical knowledge salient in the Indian water reform discourse.

4.1 Water sector: setting the national context

India inherited an over-centralised polity and bureaucratic system from the colonial rulers (Asthana, 2009), which remained intact due to the separatist and the divisive fears that the partition of the country witnessed immediately after independence (Weiner, 1999). The Indian Constitution gave a great deal of economic and political power to the centre, where sub-national units (henceforth states) depended on the centre for a share of economic resources. The instruments for this transfer were shares in taxes, plan outlays (Five Year plans prepared by the Indian Planning Commission), grants-in-aid mainly from the Financial Commission, and loans to help the states prioritise their development needs and reduce regional disparities. The states' share of central government taxes was

significantly less than that of the centre[31](Weiner, 1999). Therefore central support for state projects within the social sector remained critical until the 1990s as the states had limited fiscal autonomy (ibid).

Under the Indian Constitution, the responsibility to develop and manage water resources forms a part of the State list (Item 17 in List II of the Seventh Schedule) (Basu, 2009). Thus the states have the freedom to legislate on the corresponding laws related to water supply, irrigation, flood and drainage. The centre can provide - and has done so, in various instances - the enabling framework within which the states operate and manage their water resources through persuasive politics. For example, national water policies, prepared by the Ministry of Water Resources (MoWR), provide the basic guiding principles for water management in the country[32]. Furthermore, Entry 56 of the Union list stipulates that the extent to which regulation and development of water supplies "falls under the control of the Union is declared by Parliament by law to be expedient in the public interest" (Ministry of Water Resources cited in Mehta 2004: 22).

The Centre can also influence the states using the politics of pressure, through grants and financial outlays from the Planning and Finance Commissions (Sangameswaran, 2006). Thus there are three national bodies which deal with the water sector - the Ministry of Water Resources (MoWR), the Planning Commission and the Finance Commission[33]. These bodies, through grants, outlays and loans, have encouraged the states to toe the line of the central guidelines. For example, the Command Area Development Programme (CADP) was one of the major initiatives from the Centre, and focused on raising irrigation

[31]The major tax sources for the states are sales tax, liquor excise duties, land revenue, agricultural income tax, urban land taxes and motor vehicles tax. Income tax (with the exception of agricultural tax), corporate and customs duties are collected by the central government and these shares are larger than the state tax portfolio. See Weiner 1999.

[32] The Centre also has direct control over planning and technical resources through organisations such as the Central Water Commission, Central Ground Water Board, and National Water Development Agency. These function under the MoWR (Saleth and Dinar, 1999). There are also several line ministries at the Centre including Ministry of Rural Development, Ministry of Urban Development which deal with the water sector, for example drinking water, sanitation, etc.. Here I have referred to these three bodies for the purposes of the water resources sector.

[33] Transfers from the state comprise statutory and non-statutory transfers and take place through three channels. The Finance Commission recommends the proceeds from central taxes and non-plan grants. These are statutory transfers. The Planning Commission makes non-statutory transfers through plan grants. The third channel is the Central Ministries, which make both plan and non-plan grants (Government of India, 2010b).

potential and agricultural productivity (Sekhar, 2007). The CADP was launched in the Fifth Five Year Plan (1974-78) following the recommendations of the Irrigation Commission and on the advice of the World Bank (Ramamurthy, 1995). Since the 1970s, the Planning Commission has heavily financed irrigation projects in several states under the CADP (Narayanamoorthy and Deshpande, 2005; Sekhar, 2007)[34].

Prior to the 1990s, the central thrust of the water policy was aligned to the development planning model of the country. Though water forms part of the State list, the Planning and the Finance Commission were instrumental in universalising the Nehruvian vision of socialist development across the country. The national (water) strategy in the first few decades after independence treated water as a critical input for agricultural intensification, hydropower generation and achieving food security. This was most evident in the drive for a Green Revolution after the food crises of the mid-1960s (Ramamurthy, 1995; Iyer, 2011). Irrigation also became a substitute for more fundamental changes such as land reforms in the country (Ramamurthy, 1995).

This strategy of water development thus prioritised water availability, optimising storage and building more dams. This thinking was also marked by "an engineering paradigm", explained a former Secretary of Water Resources, Mr. Ramaswamy R. Iyer. This essentially meant making more water available for use, a supply side response to projected irrigation demand. He writes -

> Attention was focussed on what is referred to as 'water resource development', which meant mainly big projects, i.e dams, reservoirs, canal systems. This approach became a part of the Green Revolution strategy and produced dramatic short-term results […]. However, in the long term, that approach, and the idea of 'development' with which it was linked set in motion an ever-growing, unmanageable demand for water, inflicted great damage on soil, was accompanied by inequities and injustices various kinds (Iyer, 2011: 203).

Thus, water was essentially a productive asset to be harnessed for food productivity and agricultural development. Irrigation, prior to the 1990s, was

[34] The CADP was later restructured into the Command Area Development and Water Management Programme (CADWMP) (2004-05). In 2008-2009, it became a state sector scheme funded by individual states. The main function is to encourage devolution of water resources management according to the principles of subsidiarity (Government of India, 2010a).

viewed more as an input than a resource in itself. This 'productive' focus was also retained in the 1987 National Water Policy (NWP), which was the first attempt to consolidate the basic principles of water management at the national level. The emphasis of this policy was still on development and harnessing of water resources, how water could best be harnessed and its productive use optimised. The 1987 policy noted that-

> While the irrigation potential is estimated to have increased from 19.5 million hectares at the time of Independence to about 68 million hectares at the end of Sixth Plan, further development of substantial order is necessary if the food and fibre needs of the growing population are to be met (Government of India, 1987: 3).

This NWP was the culmination of the first attempt to bring a consensus among the states to agree on certain basic principles about water. However it was also drafted against the background of a changing political and economic climate. Mr. Rajiv Gandhi, the Prime Minister of India, was critical of the *license-permit raj*, or an interventionist economy, and professed a "complete absence of prejudice against the private sector" (Ahluwalia 1998 cited in Asthana, 2009: 32). Mr. Gandhi placed emphasis on dismantling India's excessive regulatory apparatus and unleashing entrepreneurial forces[35]. Though this reformist intent was not sharply visible in water policy, the 1987 policy did signal a movement towards managerial concepts such as river basin planning, volumetric pricing of water and cost over-runs in irrigation projects, issues that have continued to recur in policy documents elsewhere (Government of India, 1987; World Bank, 1998b; Government of India, 2002). However, the 1987 policy remained no more than a "brief enunciation of generalities and was never operationalised" (Iyer, 2009: 570). It also portrayed how "policy makers either wanted to keep covering their policy positions with a robe of ambiguousness or were naïve to the emerging political realities of water markets" (Narsalay, 2003: 3).

Up to the 1990s, donors also played a significant role in the overall development of the water sector. Through objectives of rural and agricultural development, irrigation formed an important component of the aid strategy (Lipton and Toye, 1990). For example, the World Bank (henceforth "the Bank") was one of the

[35] Gandhi's regime is also regarded as the phase of halted liberalization (cf. Sachs et al., 1999; Weiner, 1999). The primary target for reform was dismantling economic controls especially related to industrial development and private sector.

primary lenders and technical advisers in the irrigation sector (Kirk, 2011). Between 1950 and 1993, total lending for irrigation accounted for 7 percent of the total Bank lending in this period (Mollinga et al., 2010). This was, however, miniscule in relation to the country's Gross National Product, and had little effect in terms of engaging with the politics of irrigation policy (Ramamurthy, 1995). However the balance of payment crises in 1990s, which heralded the economic reforms in the country, changed the nature of this aid relationship. It was during this transition from the command and control style of governance to market led mechanisms - which led to a new style of water managerialism - that regulation made its entry into the Indian policy discourse. I now turn to those ideational and political alignments in the next section.

4.2 The first step to 'managerialism': economic federalisation of the Indian State (1990 onwards)

The balance of payment crises and the growing fiscal deficit of 1991 brought fundamental changes to the governance structure of the country. This was also part of the global trend, diffused across the world through the 'Washington Consensus'[36]. Besides opening the doors to disinvestment in core areas of power, telecom and the financial sector, the Indian State underwent major deviations from how it had traditionally conducted its centralised planning (Asthana, 2009). The economic crises radically restructured the centre-state relationship and altered the balance of power between the states and the Centre (see Jenkins, 1999; Sachs et al., 1999; Weiner, 1999; Rudolph and Rudolph, 2001; Saez, 2002; Sinha, 2004; Asthana, 2009).

Against the backdrop of the financial crises, capital expenditure of both Centre and states as a proportion of national expenditure declined significantly. The Centre's gross assistance to states' capital formation declined from 27 percent in 1990-91 to 12 percent in 1998-99 (Rudolph and Rudolph, 2001). Figure 4.1 demonstrates this decreasing trend in the irrigation sector against the total plan outlay; from the Seventh Plan onwards (1985-1990) there is a steady decline in

[36] Term coined by Williamson in 1989 which defined ten policy prescriptions of structural adjustment reforms such as tax reforms, trade liberalisation, fiscal reforms etc. It was initially articulated in reference to the Latin American countries but is also used generically to denote economic reforms that followed the structural adjustment packages in developing countries. (see Williamson, 2004).

the outlay for the irrigation sector. In this context of reduced funding from the Centre, the state governments were required to 'put their house in order to compete for private investments' (Sachs et al., 1999). As direct intervention by the centre reduced in the state economies, the states also became prepared to take advantage of the changing investment climate (Weiner, 1999).

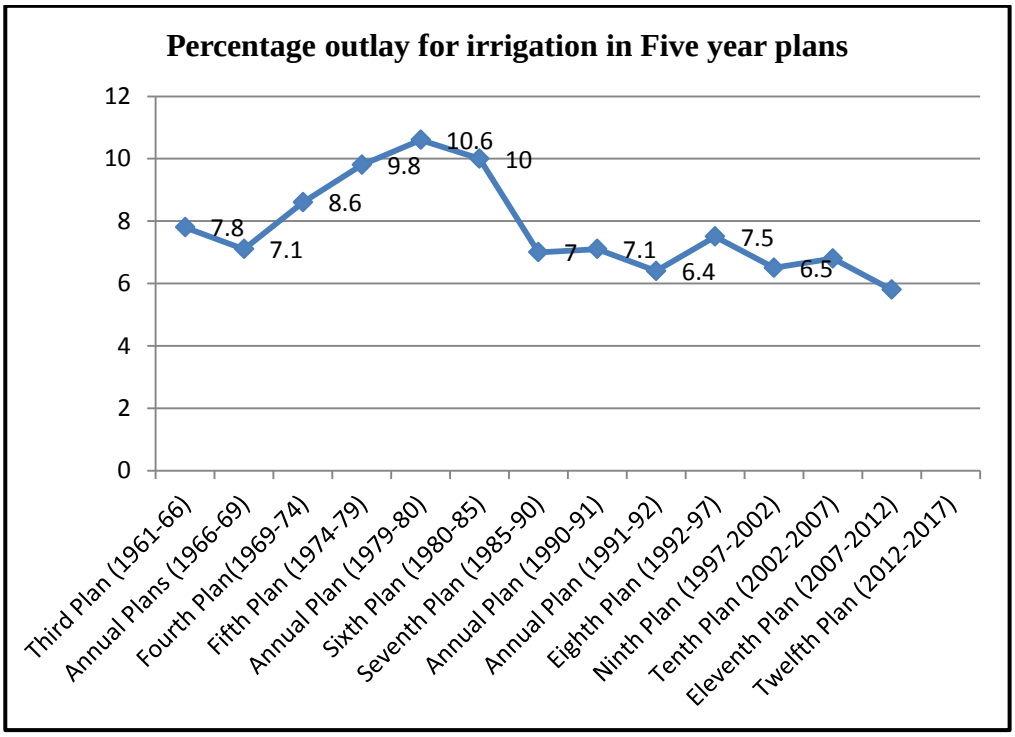

Figure 4.1: **Percentage outlay for irrigation in Five Year Plans (Government of India, 2012a)**.

This search for capital also meant radical restructuring of the financial and fiscal performance of the states. Kirk (2011) calls this a transition from Indian states to an "India of the States" (Kirk, 2011: xxiii) whereby states emerged as "marquee players" (Rudolph and Rudolph, 2001: 1541) in defining their growth strategy supported by a new group of businessmen, economic regulators, and financed by international banks such as the World Bank and the Asian Development Bank. This group were to become the policy intellectuals who accelerated the reform agenda in several sectors. In this process, the states were also exposed to the discipline of the international lenders who simultaneously applied gentle pressure to adopt neoliberal policies. Bilateral agencies, such as DFID, the USAID, the BMZ (German aid) and the OECF (Japanese aid) expanded their work through various projects and policies related to drinking water, sanitation and irrigation

(Narsalay, 2003; Asthana, 2009). This changed the nature of Centre-state relations in that the states which had previously competed vertically for centrally determined resources were now locked into horizontal competition among themselves for funds from a variety of different actors, especially the donors (Sinha, 2004).

Andhra Pradesh was one of the first states to fall in line with this radical restructuring programme (Rudolph and Rudolph, 2001; Asthana, 2009), or what the World Bank called the "big bang approach" (World Bank, 2002: 10). Chandrababu Naidu, the Chief Minister of Andhra Pradesh, emerged as the very model of a Chief Minister CEO and was rewarded by the World Bank for his business-style governance (Rudolph and Rudolph, 2001). Several other states, such as Karnataka, Maharashtra, and Rajasthan, followed the same trajectory whereby the Chief Ministers transformed themselves into de facto CEOs to chase private and foreign funds (ibid). In the water sector, Andhra Pradesh led the way by bringing in a state-wide Act for WUAs, also referred to as the Andhra model for irrigation management transfer (discussed further in the next section).

This horizontal competition was also well timed to fit with the country strategy of the Bank, which made the strategic shift from project-based financing to sector-specific investment. Even before the balance of payment crisis in the 1990s, the Bank's lending portfolio comprised individual development projects. In contrast to project-based lending, sector loans were large-scale integrated investment packages that gave better leverage to the Bank to consolidate and push through fiscal and financial restructuring in the states (World Bank, 2002; Sekhar, 2007; Kirk, 2011). This "comprehensive packaging ensured that the Bank's dialogue in each sector/ subsector addressed institutional and financial reforms issues consistently - a major problem in the past" (World Bank, 2002: vii).

The first phase of regulation (1990-1998) emerged in this context of altered federal relationships, aligned with economic liberalisation and change in the emphasis of the donors. The investment packages targeted dismantling the overburdened State and changing its role to that of a regulator from that of a service provider. In this philosophy lay the genesis of independent regulation. Sectors such as financial securities, insurance, telecom and electricity were

opened up to private actors, and independent regulators either became precursors or followed the 'de-regulated' sectors. The Multilateral Financial Institutions, especially the World Bank, acted as purveyors of this regulatory model, which was now embedded on the European style regulatory state (cf. Majone 1994), where regulators monitored the relationship between the service providers and consumers (see Chapter 2). Some of the regulators that emerged in the 1990s were the Securities Exchange Board of India (1992), the Insurance Regulatory and Development Authority (1999), the Telecom Regulatory Authority of India (TRAI, 1997), and the Central Electricity Regulatory Commission (CERC, 1998)[37].

Sectors such as power and telecoms, which had hitherto been State-led, were now opened up to private participation, favouring competition, and corporatisation of the relevant government department. The regulators, in these sectors, were constituted to enhance competition and prepare congenial ground for private investments. However, the specificities of this transition differed because power, unlike telecommunications, is part of the Concurrent list of the Indian Constitution (see Mukherji, 2004), whereby states and the centre share equal jurisdiction. To start with, the Indian government chose to reform those sectors which were less risky and relatively safer to reform, reforms that primarily affected 'elite politics'(Varshney, 1999; Weiner, 1999), for example, the capital market reforms. It was only towards the end of the 1990s and early 2000s that the regulatory model was replicated in the public infrastructure sectors such as telecoms and electricity.

The first generation of reforms therefore focused on core sectors of the economy. Regulation was the by-product of the economic liberalisation that took place in 1990 onwards, whereby the State had to vacate the commanding heights of the economy and make space for provision of public services through private sector participation or public-private partnerships (Government of India, 2006). The 2006 Planning Commission, which provides a comprehensive review of the

[37] For concurrent subjects (both the central and state governments can legislate over such subjects). States such as Orissa had restructured their sectors long before the constitution of the CERC at the national level. In fact in 1996 Orissa became the first state to have a power sector regulator (see Mukherji 2004).

nature of regulation in India, summarises the purpose and character of such regulation as economic regulation:

> The State seeks to achieve the effective functioning of competitive markets and where such markets are absent to mimic competitive market outcomes to the extent possible. It also identifies and addresses subsidies and cross subsidies in the pricing of infrastructure services. States generally use economic regulation in a broader context to achieve a range of non-market objectives which include ensuring universal and equitable access, consumer protection and maintaining safety and health standards (Government of India 2006: 2).

This particular framing made regulation the concomitant of privatisation, with a pronounced emphasis on efficient pricing, promotion of competition, standardisation of services and consumer protection. There has since then been general agreement on these factors being the essence of regulation, i.e. regulation is seen as important to ensure private sector participation, to signal political credibility to investors, and to ensure fair competition (Dubash, 2010). This economic regulation was marked by a movement "from an interventionist State that plans and directs the economy to a regulatory state that attempts to constrain and improve the market economy"(Rudolph and Rudolph, 2009: 70). This shift also created the policy space to experiment with ideas of transfer of ownership rights, license and pricing use (Narsalay, 2003; Asthana, 2009), and to move policy making from a public- to an expert-led private/semi-private domain, steered by the regulators.

However the water sector was yet to be formally opened up to these ideas. The first phase of reform also focused on those sectors which were either the exclusive domain of the central government (telecoms, insurance or capital market) or subjects shared under the Concurrent List, such as power. Water, however, was the prerogative of individual states (Narsalay, 2003). In its 1995 report, *Economic developments in India: achievements and challenges,* the World Bank noted that discrete changes in the policy regime in a few sectors such as finance, commerce, industry and telecommunications might not be enough to improve the economic and enabling environment in India unless sustained reforms were pursued in several key areas, such as irrigation and transport, that are constitutionally the exclusive responsibility of the state governments (World Bank, 1995). Although this first phase therefore introduced the vocabulary of independent regulators in infrastructure sectors to the country, it was only in the

second half of the 1990s, when reforms were gradual and incremental (Asthana, 2009), that the water sector was opened up to massive restructuring through several policy-driven mechanisms.

4.3 Water: the last sector to be reformed

In the early years of reforms, water did not figure so prominently in the reform debate. Water, being a politically charged subject sensitive to vote bank politics, was pushed to the second stage of reforms; the fact that it came under the jurisdiction of states only exacerbated its political implications. Alternatively, it could be argued that the specificities of the water sector, with economies of scale and sunk costs, also make it economically less viable for private sector participation (cf. Bakker, 2010). Nevertheless the need to reform this sector has been expressed independently in several quarters. Some examples are the 1992 report on irrigation water pricing (Government of India, 1992), the scattered pilot studies on promotion of participatory management since the 1980s (Patil and Lele, 1994), and the thrust on Command Area Development (from 1970s onwards). However by the 1990s the emphasis and the rationale for reforms were deeply embedded in the logic of the market and commercialisation of this sector. This was also supported by a growing 'international consensus' on water management which emerged with the Dublin Principles.

The International Conference on Water and the Environment (1992) at Dublin, and the UN Conference on Environment and Development (Rio de Janeiro) were a "turning point" (Finger and Allouche, 2002: 22) in water resource management because new approaches to managing water emerged from these conferences. These were the Dublin guidelines and the Integrated Water Resources Management (IWRM). The Dublin Principles[38] underlined the need to manage water holistically and stressed the benefits of devolution and participatory approaches to water management. However what the Dublin Principles are closely associated with is the fourth principle - of water as an economic good -

[38] The four Dublin Principles are: (1) fresh water is a finite and vulnerable resource, essential to sustain life, development and the environment; (2) water development and management should be based on a participatory approach, involving users, planners and policymakers at all levels; 3) women play a central part in the provision, management and safeguarding of water; and (4) water has an economic value in all its competing uses and should be recognised as an economic good (International Conference on Water and the Environment, 1992).

which has become hugely influential in guiding water policy debates, international deliberations and national policies across the globe.

In succession to the Dublin guidelines the 'IWRM package' (Shah and Koppen, 2006) sought to institutionalise the Dublin Principles, emphasising the need for a national water policy, water law and regulatory framework to guide sustainable water resource management and provide a normative framework to guide all water sector players. Central to the Dublin Principles and the IWRM paradigm were prescriptions emerging from a scarcity narrative (Movik, 2012) or the "perceived urgency of a water crises" (Finger and Allouche, 2002: 28). This precipitated the need to optimise the use and allocation of water, embedded mainly in an economic logic of efficient pricing. These guidelines strategically overlapped with the structural adjustment policies of the International Monetary Fund (IMF) and the World Bank, and "led to systematic opening of the policy and institutional spaces in [the] water sector in many countries of the world" (Mehta 2004: 2).

I have so far explained how regulation emerged as an off-shoot of structural adjustment processes that altered federal relations in India. These changes in federal relations laid the state economies open to the discipline of International Financial Institutions, and also those sectors which were predominantly the prerogative of the state governments. This led the way for widespread restructuring in the water sector. However this restructuring was chiefly inspired by an emerging global consensus, or "behind the border consensus" (Mehta, 2004), on water which began to emerge in the 1990s. This consensus is primarily embedded in defining water as an economic good. The Dublin formulation also became the guiding premise for the Bank's[39] policy in the Indian water sector from the mid-1990s onwards. I will now show how the idea of independent regulation emerged and was rationalised in several of the Bank's documents[40].

[39] There are several other multilateral and bilateral aid organisations which have provided aid to the water sector. These include the Asian Development Bank, DFID (UK), USAID (USA), OECF (Japan) and BMZ (Germany). However the World Bank is the largest donor in this sector (see Narsalay, 2003) and the analysis primarily focuses on the Bank because the reform project, MWSIP, is also funded by the Bank.

[40] See Appendix 11.3 for the list of documents.

4.3.1 The World Bank's comprehensive approach

The 1993 *Water Resources Management Policy* of the Bank recognised the dismal performance of the water sector in terms of outputs, and shifted from project-specific to sector-specific funding (World Bank, 1993; World Bank, 1998b; World Bank, 2002; Dharmadhikary, 2008). This global policy paper also highlighted the shift from water development to water management and served as a guideline for developing an analytical framework -

> …that takes into account interdependencies among sectors and protects aquatic ecosystems. Such a framework would guide the establishment of improved coordination among institutions, consistent coherent policies, and targeted government actions…efficiency in water management must be improved through greater use of pricing and through greater reliance on decentralization, user participation, privatization and financial autonomy to enhance accountability and improve performance incentives (World Bank, 1993: 40).

This shift in the Bank's approach was a result both of internal reviews within the Bank regarding their lending projects and of the growing concern over environmental issues at the global level. It also fused economic and environmental concerns together through the concept of "sustainable water resources management" (Finger and Allouche, 2002).

These changes[41] also worked in tandem with the economic federalisation of the Indian State and the emerging global consensus on water. Sector lending provided greater leverage to the Bank to directly influence sector restructuring at the state level. By attaching stringent conditions to the loans, the Bank could now pressurise recipient states to introduce 'permanent and serious' changes, as opposed to mere project-driven exercises (Dharmadhikary, 2008). With this "changing focus" (Saleth, 2007: 300), the Bank increasingly involved itself in Indian policy debates, both inside and outside the water sector. Moreover, the altered federal relations provided the Bank with the opportunity to finance water resource consolidation projects, thus "enhancing the state[s] as the focus of decentralisation in national policy" (World Bank, 2002: vii). The 1993 review laid the foundation for the global discourse of reforms, but it was the 1998 review which further institutionalised these principles in the Indian context. For example,

[41]Outside of the water sector, there was yet another Bank report that lay the foundation for this transition. The 1994 Bank report on *Infrastructure for Development* also proposed changes in infrastructure sectors. It provided three key prescriptions for reform: commercial management, competition and user participation. (see Finger and Allouche, 2002)

from 1993 onwards, several states either came up with water policies or made key changes in restructuring the water sector: Tamil Nadu (1994); Orissa (1995); Rajasthan (1999); Andhra Pradesh (1998); Uttar Pradesh (1999); Karnataka (2002); Madhya Pradesh (2003) and Maharashtra (2003) revised their policies in line with World Bank principles.

The 1998 review was the synthesis of a sector-wide programme undertaken in partnership with the Government of India and the World Bank, with contributions from the governments of UK, Denmark and Netherlands (World Bank, 1998b). Highlighting that the Indian sector is caught in a 'vicious circle' of inefficiency and low returns, the review recommended two mechanisms for performance improvement: first, intersectoral and intra-sectoral allocation and management; and second, improving water service delivery in all subsectors (irrigation, drinking water and sanitation). Given that water has both public and private good characteristics, the Bank argued that responsibilities should be divided between the government and the non-government stakeholders. It thus stressed a shift towards demand-oriented water management, decentralisation of decision making and inclusion of non-government stakeholders to achieve financial viability of service delivery (World Bank, 1998b).

Drawing heavily on the Dublin-IWRM formulation, the 1998 review recommended "commercialization of operations at all levels" (World Bank, 1998b: 53) in the water sector. The principal focus of this review was on developing the appropriate framework of economic incentives to provide efficient allocation and utilisation of water resources. This meant an emphasis on full cost recovery, private sector participation, raising agricultural tariffs and developing enforceable water rights for inter- and intra- sectoral transfers (World Bank, 1998b).

The 1998 report became the ideological precursor to all the major water sector reforms - rural and urban drinking water supply, irrigation and drainage - that came afterwards. Following this, the Bank also began to invest in several large-scale restructuring projects in many states, starting with Andhra Pradesh, Madhya Pradesh, Uttar Pradesh and Rajasthan (Dharmadhikary, 2008). The National Water Policy (Government of India, 2002), which was released in 2002,

mainstreamed several of these initiatives into basic principles. The policy encouraged the participation of non-state actors: the water users, civil society, private sector, municipalities and *gram panchayats*. It laid particular emphasis on the involvement of users in the operation, maintenance and management of water infrastructure, with a view to eventually transferring such facilities to user groups. For the 2002 policy, private sector participation became the purveyor of innovative ideas, corporate management, service efficiency and financial resources (Government of India, 2002). Stressing financial sustainability, the policy declared:

> a need to ensure that water charges for various uses should be fixed in such a way that they cover at least part of the capital costs subsequently. These rates should be directly linked to the quality of service provided (Government of India, 2002).

The 2002 policy therefore created the space for non-state actors in a sector which had been predominantly been State driven. However the 2002 policy did not mention independent regulators explicitly and stopped at private sector participation and corporate management of water resources, underlining the regulatory role of the State. Given the state-sector specific focus, the vocabulary of the water regulator only gained prominence with the articulation of the Bank-aided Maharashtra Water Sector Improvement Project (MWSIP). The Bank also played a prominent role in introducing the concept of 'independent regulation'. It is the 1998 review and several subsequent documents that built up the momentum for the regulatory model in Maharashtra. I now focus on three key interlinked narratives that emerged in this 'knowledge-building process' and show how these have shaped the evolution of 'independent' regulation in the World Bank-assisted MWSIP project in Maharashtra. These narratives legitimate certain ways of portraying the 'problem' (cf. Keeley and Scoones, 2003) of the Indian water sector and also mark the "cognitive and ideological boundaries" (Molle, 2008: 131) that define the nature of the regulatory discourse in the country.

Indian Water sector as the 'failing' sector

Douglas (1986) remarks on the sociological origins of institutions, and states that institutional origin and survival often hinges on construction of binaries, to create the 'other' in order to gain legitimacy for institutions. Likewise, the Bank's framing of reforms and the need for regulation rested on certain binary categories that have been reiterated over time in several policy pronouncements and

documents. Some examples of these binary constructions are: subjects vs. clients and consumers, department vs. water service agency, ad hoc tariffs vs. scientific tariffs. I now show how these binaries were refracted through certain narratives and models and argue that at the heart of these binary constructions is the contest of the State vs. the market.

The 1998 review by the Bank began with the premise that the Indian water sector was caught in a vicious circle of "inadequate financial allocations" and "inefficient and bloated service institutions", leading to poor service quality. The result is "customer dissatisfaction" reflected through "unwillingness to pay", which, finally, results in low financial returns (World Bank, 1998b: 30). Complementing this situation was the looming scarcity scenario due to which India was speeding towards "a turbulent future" (Briscoe and Malik, 2006), wrote emphatically John Briscoe, the chief architect of water reforms in several countries of the South. He is also the principle architect of the MWSIP programme in Maharashtra.

From 1998 onwards, several Bank publications not only reified this scarcity scenario but also brought forth 'comprehensive' strategies to bridge the efficiency and incentives gap in this sector. The focus now was on the need to 'develop economic incentives' and not infrastructure. This led to a distinct water managerialism that 'water needs to be managed rather than developed [the strategy for the first four decades after independence] and that such management is possible only when water is treated as an economic good rather than a public good' (World Bank, 1998a; World Bank, 1998b). By putting management at the centre of water problems and the future strategy, the Bank was also putting the State at the centre of its restructuring strategy. Recommending commercialisation of operations at all levels, these reviews essentially stressed the overhauling of the water sector, with the principle emphasis being on limiting the bulky bureaucracy, which was a strain on the state budget. Therefore the old development paradigm based on centralised decision making, administrative regulation, and bureaucratic allocation was now to make way for "decentralized allocation, economic instruments and stakeholder participation" (Saleth and Dinar, 1999: iii).

This ‘rescaling of the State’ (Asthana, 2009) created pressures on the Indian State from above and below, whereby both the Centre and state governments were required to reassess their monopoly and ascribe new roles to the energetic, nongovernment sections (World Bank, 2002: 17) In his analysis of India’s turbulent future, Briscoe writes that the water sector is attuned to a “command and control” style of operation:

> The Indian state water apparatus still shows little interest in the key issues of the management stage - participation, incentives, water entitlements, transparency, entry of the private sector, competition, accountability, financing and environmental quality […]Confronted with [the] reality of limited supplies and growing and changing demands, the need is obviously for a management framework which stimulates efficiency and which facilitates voluntary transfer of water as societal needs change […]A central element of a new approach is that users have well-defined entitlements to water. The broader messages are that the ideas of the 1991 economic reforms must be drilled down from the regulatory and financial sectors into real sectors (including water) if India is to have sustainable economic growth, and that the role of the Indian water state must change from that of a builder and controller to creator of an enabling environment, and facilitator of the actions of water users, large and small (Briscoe and Malik, 2007: 2-6).

For the Bank, the ‘controlling’ and closed state water apparatus was clearly not on the same frequency as required for reforms. Moreover, extrapolations from real or core economic sectors came along with recipes for institutional restructuring. For the irrigation sector, this meant restructuring the role of the state irrigation institutions and unbundling their services into water services agencies, creating regulatory institutions modelled on Orissa’s power sector and the UK water sector, and opening up the sector to private players. Bulk water delivery, maintenance and financial management were to be assigned to autonomous and financially viable units, which would now be accountable for their performance to regulators and users (World Bank, 2002). Therefore service-based entities were to be created out of the state departments, and consumer entities were to be created out of bulk consumers, mainly farmers.

The Project Appraisal Document (PAD) of the MWSIP also places clear emphasis on reshaping the role of the State in line with this thinking. The team leader for the MWSIP, a World Bank official, made it clear that independent regulation was the answer to such a command and control style of operation in the water sector in Maharashtra, when he argued:

> This is a new idea and we need to see how it will take root because there is a legacy of the water sector as being state-run, and everything is in the hands of the

> government. Previously, the case was that the ministers would reserve water projects in their constituency. They did not bother about the availability of water or feasibility of the project but just sanctioned it. Now with the MWRRA, the political interference will be kept in check. The Regulator will do it in the perfect way and the institution will evolve (KI02).

Thus for the Bank, the setting up of the independent regulator was the 'first step' in water regulation in Maharashtra. Regulation served various functions: it depoliticised decision making and "kept the adhocism of politicians and state" out of the water 'business'. It also transformed farmers into water users who were tied to the water service agency through the Regulator to ensure efficient pricing of water. Extolling the benefits of independent regulation, the Bank official explained that:

> Independent regulation is the efficient way to determine water pricing because it will be done on a scientific basis (what is the cost of providing that water and who pays that cost, of course). We have to know it independently. We have to come away from the idea of 'giving water for free' (KI02).

This resonates with the economic framing of regulation explained through efficiency, depoliticised decision making and, above all, ensuring the economic value of water. However, this framing also had the 'dangerous potential' to move water into the domain of the technical; it scientised water pricing and allocation and rationalised it through the arguments of efficiency. Regulation therefore assumed a degree of insularity from the unscientific qua 'political' aspects of water allocation and pricing. Thus the narrative that emerged was that the inefficient and bulky state apparatus and excessive political interference were significantly responsible for the poor performance of the water sector, and the solution thus lay in restructuring the state apparatus, both political and bureaucratic. The question that was yet to be addressed was how the networks of power embedded in the State would be displaced by this managerial overhauling. I analyse this further in forthcoming chapters.

While regulation entered the reform lexicon as part of institutional restructuring, its success was associated with a larger reform package, which also rested on certain models. Inherent in using these models as "blueprints of success" (Molle, 2008: 146) were the dangers of universalising the recipe for success, on one hand, and circumventing the discussions on institutional complexity and the demands of the political economy, on the other.

Models as Messiahs: the Andhra and Orissa models

The Bank's documents, which are inadvertently self-referential (Molle, 2008; Asthana, 2009), prescribed institutional restructuring of the Indian water sector through certain models: the Andhra Pradesh model for Irrigation Management Transfer and the Orissa model for power sector reforms. The Andhra model was in turn modelled on international examples such as Mexico, Chile, and Turkey, which are celebrated as 'best practice' cases of irrigation management in the resource database of the Bank. In these examples, irrigation systems were handed over to the water users to achieve financial viability in the irrigation sector. (Gorriz et al., 1995; Saleth and Dinar, 1999; World Bank, 2004). These models served two purposes: they were seen as risk minimisers because they came with a belief that what was successful elsewhere should be successful in India; more significantly, they provided "a stabilised interpretation of the origin, organisation and outcomes of a policy" (Rap, 2006: 1304) by outlining a clear roadmap for the transfer of management and its (presumed) success.

As I mentioned before, the south Indian state of Andhra Pradesh was the first state to take up the massive overhauling of its irrigation sector under the aegis of the Bank project. In 1996-97, under the leadership of its CEO, Chief Minister Chandrababu Naidu, Andhra Pradesh introduced the Andhra Pradesh Farmers' Management of Irrigation Systems Act (1997) to reform its canal irrigation system. This required the establishment of WUAs across the state, which now took up the distribution, maintenance and management of the system (Mollinga et al., 2004). This process attracted substantial national and international attention, and is a role model for the formation of WUAs in the country. This model was part of a comprehensive restructuring package from the Bank, in which it sought to develop 'an Indian model' on the lines of Mexico and Turkey (World Bank, 1998a).

The Andhra model became an icon of the Bank's Irrigation Management Transfer (IMT) effort in the country (World Bank, 1998a; World Bank, 2002). Through this process, the Bank achieved two of its water managerialism goals: one, the restructuring of irrigation bureaucracy as a service provider, i.e. the water services agency, and two, the unbundling of distribution services to a non-state

actor, i.e. the WUAs, who equate to private actors in the Bank's vocabulary (World Bank, 2002). This model created a successful image of consumer formation for the 'reformists' and also held some incipient roots of a pricing structure.

Under this reform package, the Water Charges Review Committee (WCRC) was established to ensure and work towards the financial viability of the irrigation sector. The main functions of this Committee were to undertake a review of financial performance, guide the transition to collection of water charges by WUAs and irrigation department, and manage the transition to volumetric charges. It was the first attempt in the Indian water sector to introduce a 'separate' body for reviewing water charges. However the 1998 World Bank Review noted that the WCRC did not have:

> the desired level of autonomy to set water rates, but [it did] provide expert input to the process […]future steps of evolution should include : Granting the WCRC full autonomy to set water charges; 'vesting the WCRC with regulatory authority over the irrigation sector; and the continued decentralization and privatization of the sector[…]this process is not new to India , and is being successfully initiated for the power sector in the state of Orissa (World Bank, 1998a: 88).

Thus, for the Bank, the ideal version of the WCRC was a facilitator of both privatisation and decentralisation in the irrigation sector. Under this sector-wide restructuring, the Andhra Pradesh Water Resources Development Corporation was also set up. The Corporation was given the responsibility managing and coordinating the water resources of the state (see Madhav, 2007). The functions outlined for this body bear a striking similarity with the Maharashtra model but unlike Maharashtra, the corporation was not envisaged as an 'independent body' and was state-led (KI03) since it consisted of elected representatives from the government.

There was yet another model which clearly influenced this rationale and mimicking of regulation in the water sector: the Orissa model of power reforms. Orissa was the first state to experiment with an independent power sector regulator in 1996, the Orissa Electricity Regulatory Commission. The regulator was construed as an autonomous body, and was required to set tariffs, issue licenses to private distributors, set standards of service delivery and settle

disputes between the provider(s) and consumers. The Orissa model underlined the 'distanced role of the State', where the power sector was open to private operators and service contracts were required to monitor standards (PPIAF, 2002). It demonstrated a method for "achieving sectoral restructuring, corporatization, commercialisation, privatization, competition, tariff rationilization, and autonomous regulation" which, according to the Bank, were to be the new rules of the game for water regulation in the irrigation sector (World Bank, 1998a: 90). Two fundamental issues emerged from this model-building exercise: first, the creation of consumers through WUAs which, as private entities, are the bulk water providers (the Andhra model); second, the need as a matter of principle for maintaining the autonomy of a body that sets tariffs and issued licenses (Andhra and Orissa models).

This proliferation of models as success mantras has been persistently questioned. Doubts remain as to whether the transformation promised in Mexico or Andhra models have been translated into reality (Jairath, 2001; Mollinga and Bolding, 2004; Rap et al., 2004; Rap, 2006; Madhav, 2007), and also over the autonomy and sustainability of the Orissa model of power reforms (Dixit et al., 1998). However, as failure of development projects becomes the justification for more development in Ferguson's view (see 1990), models have also become the justification for more models despite their limitations.

Reverberations of the Andhra model are fairly visible even in the MWSIP package. In my interview with the Bank official, he reiterated that the Bank, in Maharashtra, "was not doing PIM but Irrigation Management Transfer" (KI02). This clarification also underlines the Bank's vision, which lays emphasis on transfer of responsibilities. At the heart of PIM (Participatory Irrigation Management) is the argument that user participation will lead to sustainable management of resources. IMT uses similar logic but extends it further to the transfer of responsibilities. The farmers are transformed into consumers and state departments operate as a water service agency, and this relationship is monitored through a regulator. This is also in line with the neoliberal thinking which emphasises shifting of responsibilities from government to non-state actors. It is for this reason that, in Maharashtra, MWSIP consists of a package of three reform

legislations: the MWRRA for the independent regulator, the MMISFA for the WUAs, and legislation for the River Basin Agencies (RBAs)[42]. These constitute the regulatory framework in the state. The interlinkages of the MWRRA and the MMISFA were explained as follows by a senior official who was involved with Cabinet level discussions on these two Acts:

> The decision makers [in Maharashtra] were familiar with the ills of department monopoly. One of the proposals was to pass on the distribution to the WUAs. If you had the Water Users Act without the regulator, it would be difficult to implement it because no department is ready to give up power, so the WRD would have made things more difficult to give up power (KI23).

Here, the regulator is understood as a body 'outside the Department' and one that regulates the relationship between the users and the Department. In doing so, the regulator is required to check the powers of the Department. This is also consistent with the Bank's framing of rescaling the State. These models outlined the roadmap for institutional restructuring, but pricing and cost recovery also required economic incentives. These were also crucial in mitigating the effects of the intersectoral competition that plagued the water sector and in developing synergies for allocation of water (Saleth 2007). The solution lay in voluntary transfers with clearly defined entitlements. Therefore what were known as licenses for power and telecom utilities now became entitlements in the water sector.

Entitlements as economic instruments

In India, entitlements came into the reform lexicon through the MWSIP programme and they formed a critical part of the Bank's prescription for reforms. The 1998 review underlined that through legally enforceable water rights, states would provide users with protection, encourage water saving, and facilitate intra- and inter-sectoral transfers of water. This does not mean that India did not already have a system of water rights. Rights of prior appropriation (first come, first served), riparian rights (allocation based on proximity of flows) and systems of public allocations via public authorities, common pool rights and individual rights to groundwater are very much a part of the trajectory of how water is distributed and governed in India (Singh, 1992; Vaidyanathan and Jairaj, 2009; Woodhouse and Chhotray, n.d.).

[42] However, this Act had not been passed as at the completion of my fieldwork in October 2012. The MWSIP project was closed in March 2014.

However, in the context of reforms, entitlements have different connotations. Unlike the other rights, these rights could now be delinked from land ownership. Dominant models for this thinking were Chile, Mexico and Australia, where water rights systems existed and had paved the way for water markets (Rosegrant and Binswanger, 1994; Gazmuri and Rosegrant, 1996; World Bank, 1998a; Briscoe and Malik, 2006; Briscoe and Malik, 2007; Saleth, 2007). When I asked a senior bureaucrat in Maharashtra about the origin of entitlements, he immediately replied that "it is the Bank's idea and they got it from Chile and Australia" (KI26). In India, the nomenclature of entitlements only came into the picture with the articulation of the MWSIP. Here they were defined as use rights to water, to be measured volumetrically (Government of Maharashtra, 2005a). For Briscoe and Malik (2005), the justification for entitlements was premised on the limited availability of water. He argued:

> Confronted with limited availability of water, India needs to promote efficient use of the resource and facilitate voluntary transfer of water in response to changing societal needs. Clear, enforceable water entitlements at all levels are an obvious prerequisite (Briscoe and Malik, 2007: 5).

Inherent in this framing is a market-based logic whereby these entitlements can be traded in a free market with the understanding that such market-based allocations and re-allocations would eventually gravitate to the highest value uses. Prof. R.M Saleth (2007), a key advocate for market-based instruments in water management, argues that entitlements will also help in shaping the behaviour of the consumers and the service providers, whereby standards will be enforced by an autonomous agency as the regulator and users will be mindful of putting water to efficient use and avoiding wastage.

The Bank's strongest defence came with the example of Chennai Metrowater. Here the urban municipal provider, in the wake of a water shortage, was able to buy groundwater from paddy farmers in the surrounding areas and thus secure the water supply for the urban population of the city. This was a compelling rationale for advocating a regulatory framework for a water exchange regime operating on the principles of open market (World Bank, 1998c; World Bank, 2002; Saleth, 2007) [43]. Since intersectoral conflicts and the 'perceived sense of scarcity' were at

[43] For details of the case and a critical review, see Coelho (2010).

the heart of this economic formulation of rights, sectoral allocation via a third party was central to this framing of regulation as water market transactions also required a role for public institution performance to guard against monopoly development and resolve conflicts among the users (Rosegrant and Binswanger, 1994).

Calculated on a volumetric basis, entitlements, in principle, were the answer to the adhocism and political interference in the water sector (KI02) and an instrument to stimulate efficiency and accountability in this sector (Briscoe and Malik, 2007). As the Bank official explained:

> The intention behind entitlements is to ensure transparency and get rid of adhocism in decision making, which will also bring in water efficiency. We need to quantify somewhere and plan in advance and quantification brings in efficiency. Equity within entitlements means that everyone must get a share and in order to get their share, they must know what their share is and they should be able to get it. And this decision should be taken independently on the basis of water availability and the project planned availability.

This intention reflects how the World Bank conceptualised entitlements as a tool of regulation premised on the language of efficiency and quantified in terms of volumetric supply. In its framing, the Bank also successfully transformed a potentially explosive question about rights, entitlements, how one should use water, and who should decide, into 'technical questions' of efficiency and sustainability (Li, 2007). This understanding also circumvents questions on issues of customary rights (Roth et al., 2005), resource capture (Bauer, 1997) and state control (Rap et al., 2004; Movik, 2012) that have continued to recur in the implementation of water rights in other parts of the world.

Regulation therefore emerged as a congruence of different sets of rationalities, explored and experimented with in different contexts and in different sectors. Moreover, in the Bank's understanding, independent regulation is the framework which defines and revises the relationships between three actors: the State (political and bureaucratic), water users and the regulator. Besides constructing and universalising success through models, there are several assumptions in this prescriptive line of thought: one, water is an economic good and needs to be priced for its scarcity value; two, rights can be decontextualised and need to be understood through an economic logic (Narsalay, 2003; Roth et al., 2005): three,

non-state - i.e. private sector - is more efficient than the public sector and would thus be able to provide better services at reduced cost. The prices could be set through apolitical ways so that they would reflect the scarcity value of water. Feeling this water constraint will 'compel' users to be less wasteful (Saleth, 1998). These are the fundamental assumptions that drew the boundaries of 'independent' regulation in the Bank's discourse, where questions of power relations are necessarily absent.

After the introduction of the independent regulator in Maharashtra in 2005, several water regulators were set up at the state level, some at the behest of the restructuring programmes of the World Bank (Uttar Pradesh and Andhra Pradesh). By 2009, this regulatory fever also caught up with other Indian states when the Finance Commission laid down the condition of constituting independent regulators before state governments could access grants from the centre. This signalled the mainstreaming of the regulation discourse at the national level, only to be intensified by two exercises: the setting up of the Water Group by the Planning Commission, and the discussions on the 2012 National Water Policy. This phase also constitutes the third phase of regulation in the country. I now turn to these national-level actors and analyse their politics of framing water regulation.

4.4 Re-claiming the ground: the 'national' project of water regulation

After nearly fifteen years of economic reforms that led to sector-wide restructuring in India since the 1990s, several kinds and types of regulators emerged in the Indian institutional landscape (Government of India, 2006). However, regulation entering by the backdoor through donors (Dubash, 2013) led to a widespread concern over the haphazard growth of sectoral regulators. The Planning Commission took the lead in generating a discussion on the regulatory philosophy in India. This was also the time when Mr. Montek Singh Ahluwalia took over as the Deputy Chairman of the Planning Commission in 2004. An Oxford graduate, and an economist by training, Mr. Ahluwalia had held several key advisory positions in the Indian government and in international financial institutions such as the World Bank and the IMF before he took over this position. Part of the 'Change Team' which ushered India into its first phase of

liberalisation (Asthana, 2009), Mr. Ahluwalia played a key role in driving reforms within the economy on market principles.

In 2006, the Planning Commission published *The Approach Paper to Regulation*. This paper was a comprehensive review of the evolution of regulation in several infrastructure sectors. It also underlined the conspicuous absence of any single philosophy of regulation in India (Government of India, 2006). Though this paper started a dialogue on infrastructure regulation in India, water did not feature prominently. Going with this momentum, the Planning Commission released the 2010 (Draft) Bill on regulation, as a follow-up to the 2006 paper. This Draft Bill underlined the need to for a uniform regulatory philosophy for the utility sectors (Mehta, 2010). However this discussion was limited to economic regulation, designed to serve the interests of private investment, enhance competition and ensure consumer protection (CUTS International, 2010).

Though the 2010 Draft Bill made specific mention of social sectors, this discussion was limited to water supply only (The Economic Times, 2010; The Hindu, 2010). This Draft Bill reiterated the position on the retreat of the State, whereby the need for such an initiative arose because economic liberalisation has distanced the relationship between the state ownership and the responsibility for providing infrastructure services, as compared to the earlier arrangement where infrastructure was provided almost exclusively by the public sector (Government of India, 2010c; The Economic Times, 2010). Despite the peripherality of water in the 2010 discussions, it signalled two important things: one, the increasing salience of regulation premised on the understanding of the 'distanced role' of the State; and two, the need to make the 'northern' models of regulation relevant to the Indian context. This sentiment was further entrenched with the euphoria of water regulation that emerged at the national level with the publication of the 13th Finance Commission Report in 2009[44].

[44] The Planning Commission, in its mid-term appraisals, for the 10th and 11th Five Year Plans had acknowledged that water resources regulatory authority could be envisaged , which could draw on the strengths and weaknesses of the MWRRA model (Koonan and Bhullar, 2012). But it is with the grant conditionalities laid down by the Finance Commission together with the constitution of the Working Groups for the Twelfth Plan (2009-2012) that this mainstreaming has received a concrete and strong push.

4.4.1 Nationalising the Maharashtra regulator: The Finance and Planning Commission

The 13th Finance Commission (2010-2015) laid down the important criteria for grants in the water sector. Setting conditions for grants-in-aid in the irrigation sector, the report mentions that the only states that would be incentivised were those that would establish an independent water regulatory authority for the water sector. This Report also noted that "the surface irrigation sector is in need of urgent policy correction" (Government of India, 2009: 212) due to poor maintenance of irrigation systems, low recovery of user charges, and overstaffed departments which result in poor service delivery. The Finance Commission repertoire is no different from the Bank's mandate of reforming the ailing state-led sector which is trapped in a vicious cycle of inadequate financial allocations (World Bank, 1998b; World Bank, 2002). For the Commission, therefore, an independent regulatory authority staffed with qualified technical experts may help to improve the sectoral performance by aiding cost recovery. The report mentions:

> Since so many of the problems in this sector stem from lack of systematic attention by technically qualified people to the issue of the structure and level of user charges, the grant provision is conditional on setting up by states of an independent Water Regulatory Authority by 2011-12 (Government of India, 2009: 212).

This is in line with the Bank's framing of water regulation, which underlines the need to "scientifically" (KI02) price water. It also reinforces the simple narrative of cost recovery leading to better efficiency, and that such an exercise is a preserve of experts – a reasoning also offered by the Bank. The regulator would be able to price water efficiently and apolitically, and also rescue an ailing water sector in the midst of low cost recovery.

By placing conditions on grants, the Commission mainstreamed the discourse on water regulation in India at the national level. Until this point, water regulation had come under the rubric of infrastructure regulation but had lacked any substantive discussion. It was the first time that the need for water regulation was expressed via a government body at the national level. The report also signalled the interest of the central government in flagging up independent water regulation as a key area of water policy concern, not only favouring the independent

regulatory model in Maharashtra, but also laying the foundations for its state-wide emulation. The report notes:

> The Maharashtra Water Resources Regulatory Authority set up in 2005 serves as a possible model for consideration by other states. It is expected that an independent body of this kind would incentivise water user associations that would self-regulate the use of water among members and decentralise maintenance of water bodies, with funding locally recovered from users, so improving compliance with cos recovery (Government of India, 2009: 212).

By falling into line with the Maharashtra model, the Commission's recommendations overlapped with regulatory functions restricted to the irrigation sector. The regulator was also to be a facilitator for decentralisation of water distribution to aid cost recovery. The regulator would be able to determine and regulate water tariffs for all uses, determine and regulate distribution of entitlements, and periodically monitor and review costs and revenue in the water sector (Government of India, 2009). The report also made it mandatory that the establishment of regulatory authority should be notified by March 2012. The state of Jammu & Kashmir was the first to pass a law related to water resources regulation following this report (Prayas, 2011).

However these developments which affirmed the evolving Maharashtra 'model' were resisted by several civil society organisations who since 2003 had been critiquing the Maharashtra model as a neoliberal import. In recent years, several sections of civil society, including NGOs, independent researchers and academics, have from time to time organised roundtables and consultations to discuss the emergence and evolution of water regulation in the Indian context. The aim of these endeavours is to generate valuable discussion and debate on the nature of this institutional import, and to raise public awareness (CTARA et al., 2009).

Critical of the Maharashtra model as a neoliberal and World Bank import, the Finance Commission conditions meant a potential vindication of the neoliberal version of water regulation. The civil society actors got an opportunity to present their mandate when Dr. Mihir Shah, a serving member of the Planning Commission (2009-2014), proposed the idea of drafting a model regulatory bill, which could then provide a guiding framework for the states. Dr. Shah, an economist and academic with over twenty years of experience in grassroots

initiaves, brought to the Planning Commission a different style of working. In charge of the water resources portfolio for the Twelfth Plan (2012-2017), he brought together several working groups to work on the water sector. Underlining that the "business as usual" (Shah, 2012: 42) approach to water management might not work in the face of water stress and the limits that it places on the development of water resources, the Water Group was entrusted with bringing to the table fresh ideas about water management in India.

The unique feature of these groups was that for the first time in the history of the Planning Commission, groups were chaired by experts from outside of the government, i.e. non-bureaucrats (Shah, 2012). This also meant the entry of several actors from civil society. I now show how this group attempted to reshape the 'mainstream' thinking on independent regulation at the national level.

4.4.2 The Sub-Group on Water Regulation: getting the 'experts' together

In April 2011, a national consultation entitled *Water Regulatory Authorities in India: Rethinking the Current Models* was organised by Prayas, TISS and Indian Institute of Technology (Mumbai). Organised against the backdrop of the Finance Commission's conditional grants, the key aim of this consultation was to discuss the nature of regulation in the Indian context. Another aim was the constitution of the Sub-Group on water regulation (henceforth the Sub-Group), which was entrusted with the responsibility for suggesting a "blueprint for the better functioning of Water Resource Regulatory Authorities in India" (Prayas, 2011: 2).

With Maharashtra being the only state with a working regulator, the Consultation took the MWRRA as the reference point for discussion. Invited to 'observe' the discussion, I noticed that this consultation created several dichotomies in the epistemic community on regulation in India. While it attracted academics, practioners and bureaucrats from across the country, the gathering was marked by bureaucrats being under-represented and civil society over-represented. In the majority were the members from Maharashtra-based organisations such as Prayas and SOPPECOM which work in the water sector, Shripad Dharmadhikary from MANTHAN, an ardent critic of the World Bank approach in the water sector,

Mrs. Rohini Nilekani, Chairperson of Arghyam, a Bangalore-based philanthropic organisation working in the water sector. It also included several academics such as Dr. Navroz Dubash, a policy intellectual with expertise on infrastructure regulation, and Prof. Philippe Cullet from SOAS who has worked on water law reforms in India. Some of the participants in this consultation were later dispersed across the several working groups coordinated via the Twelfth Plan.

The Sub-Group on the Model Bill for State Water Regulatory Authority Act was also constituted alongside this Consultation. This group was chaired by a Professor from Tata Institute of Social Sciences (TISS), associated with the non-profit organisation, Prayas. Prayas works in the area of electricity regulation and has begun to focus on water sector regulation in recent years. For the Chairperson, this group was an opportunity: a potential way to block the World Bank approach to regulation from entering the national framework. In a public seminar organised at the Institute of Development Studies (UK), he stated:

> The Planning Commission approached us and we said that we do not subscribe to the idea of a model bill. There is huge diversity in India, and there is no point in trying to thrust something on the states because water is the issue of the autonomy of the states. In the federal system of India, water resources are a matter of state policy. They threatened us and said that they will get the World Bank to do this. This went on for some time and later they said that okay, we will give it to the World Bank persons and they might bring down the same model against which you have been fighting for the last ten years (December 2011).

Thus, alongside the donors who had 'programmed' the regulatory model into the Indian water sector, this group virtually became the main group for providing an alternative discourse on regulation in the country. The distinction was made clear at the start as the proposed Bill used the term 'Water Regulatory Authority (WRA)' instead of 'independent water regulator'. *The Background Note* from Prayas explains this: "WRA encompasses various forms of regulatory agencies […] that could be established in the water sector, ranging from a fully independent regulatory authority to advisory level regulatory agencies" (Prayas, 2011: 1).

According to Dr. Dubash, one of the unique features of this group was that it brought "practioners, policy makers and scholars from diverse groups into one single room" (KI06). Though this was a remarkable feature as far as the constitution of the group was concerned (Shah, 2012), this selection also sowed

the seeds of discord between the officials and the civil society. The MWRRA officials, some of whom were members of this group, saw it as a direct assault on their own institutional processes (K121, KI23) - a critique of their model. Moreover, the fact that the group had a substantial number of members from civil society organisations such as Prayas and SOPPECOM, one of whom was even the Chairperson, was a sore point for government officials. This tussle between the 'insiders' and 'outsiders' was echoed in several interviews with policy makers during my fieldwork in Mumbai. For some of the members, it was a point scored for civil society, but for the MWRRA officials, this group became more of a policy challenge than a partner. Several officials disapproved of the constitution of the group and the model bill, which they would eventually call 'impractical and institutionally unsound' (KI20, KI21). Explaining his annoyance, a MWRRA official stated that he "would try his best to get it removed from the final document" (KI21).

While this Group did create friction between the civil society actors and the government officials, it was also internally fragmented and had dual positions on the conceptualisation and institutionalisation of regulation. The predominant role of Prayas gave rise to the perception that they controlled key issues and agendas (KI12, KI22) Though SOPPECOM championed the cause of devolution of the regulatory role, the Bill was often referred to as Prayas' bill (Field Journal, 2011). Moreover, this internal fragmentation became more prominent at the state level where these very organisations which opposed the regulatory model at the national level were now working with the Regulator in the state (see Chapter 6).

However, the group's recommendation for WRAs now forms a part of the Twelfth Plan. Highlighting the need for a paradigm shift in water, the Plan document underlined that new frameworks were required for the water sector. The rationale for WRAs is explained thus:

> We need to evolve an institutional framework…that facilitates setting up of regulatory bodies that would enable resolution of water conflicts. To protect the right to drinking water for all, there is no alternative to entitlements and appropriate pricing of water. This demands a transparent and participatory process of determination of entitlements and prices. Again to ensure sustainability and meet environmental needs, a regulatory authority is a must in each State. Since water is a natural monopoly, international experience clearly indicates that it is regulators who provide the cutting-edge that is otherwise missing in a non-competitive sector. Regulators have contributed to major improvements in water-

> use efficiency, water quality and provision of environmental services (Government of India, 2012c: 174).

Therefore the Plan document provides several reasons for setting up a regulatory authority with a strong public interest motive. By incorporating social aspects of regulation, including health and water access, it continues to place heavy emphasis on the function of pricing determined through participatory processes (also see Koonan and Bhullar, 2012). It specifies that any decision on tariffs is ultimately a political one, where the regulator plays an advisory role[45]. It resolves the issue of autonomy of the regulator by putting political and normative decisions under the State Water Resources Regulatory and Development Council (SC), which will consist of elected representatives from government bodies as the legislature and stakeholders from other sections of the society. This Council will review the work of State Independent Water Expert Authority (SIWEA). The SIWEA, on the other hand, will be a body staffed with 'independent' professionals from diverse disciplinary fields and will make the technical or predominantly non-normative decisions which include preparing regulations, and enforcing compliance with the guidelines and rules of regulation. Through the principle of subsidiarity, the Plan also suggests a regional presence for the regulator at state, river-basin, sub-basin and local level (Government of India, 2011).

The Planning Commission's initiative thus culminated in a rethinking of the regulatory framework for the Indian water sector. It attempted, to an extent, to provide a different version to the World Bank model in two key ways. One: it tries to replace the model of regulatory 'independence' with a framework for political accountability and legitimacy, calling it "water regulatory systems". This, as the working group member put it, was to "incentivise various sections/actors in order to make the regulatory framework work" (KI06). Two: it opposed a centralised regulator (such as the MWRRA) in favour of a decentralised regulatory system with a regional presence. As much as it sought to delink itself from the top-down model of the Maharashtra model, it also created a set of binaries in the process. It retained the division between the political and

[45] It lists several other areas of regulation: water use and extraction, service provision, environmental sustainability, disaster management, climate change, allocation of financial and other resources, etc. (see Government of India, 2012c).

technical decisions across the two bodies, the SC and the SIWEA. This reinforces the argument that a regulatory authority, whether autonomous or independent, is still constituted as a 'body of experts'.

Nevertheless, this Bill and the accompanying exercises that went into its preparations have further mainstreamed regulation into the national discourse. This initiative also indicated the government's stand that there is no going back on regulation which is 'independent' or autonomous in some other form. This is further ratified by the 2012 National Water Policy, which also mentions the need for an 'independent' regulatory authority.

4.4.3 The National Water Policy 2012

As the Planning Commission prepared the model Bill, a new National Water Policy (NWP) was being drafted by Ministry of Water Resources (MoWR). The 2012 NWP Policy is in line with the 2002 water policy, which made the shift from t the service provider to the regulatory role of the State. This policy also recommends the formation of an independent regulatory authority whose chief function is to set tariffs. It states:

> Pricing of water should ensure its efficient use and reward conservation. Equitable access to water for all and its fair pricing, for drinking and other uses such as sanitation, agricultural and industrial, should be arrived at through an independent statutory Water Regulatory Authority, set up by each state, after wide ranging consultation with all stakeholders (Section 7.1, Government of India, 2012b) .

Following the policy, MoWR also constituted a group to prepare the national framework law, which also recommends the constitution of an 'independent' Water Regulatory Authority for every state as an institutional mechanism to determine 'equitable' pricing. Thus it does not digress from the economic and price setting role of the regulator: it merely elaborates some of the principles on which this role could be based. It provides three principles for the constitution and operation of such a mechanism: 1) the authority will ensure equitable access to water for all and its fair pricing for all its uses; 2) the decisions of the regulatory authority will be subject to judicial review; and 3) water charges will be determined on a volumetric basis. While it recommends differential pricing for fundamental needs such as drinking and sanitation, it also underlines the need to subject the allocation of pricing to economic principles to ensure efficient use (Government of India, 2013). Up to May 2013, the latest document from the

central government was the framework law, which underlined the need for a regulator for the water sector. The NWP 2012 and the national framework law define MOWR's position on regulation. It provides the rationale for regulation as a pricing framework, and places less emphasis on institutionalisation as in the Model Bill of the Planning Commission. Unlike the Model Bill, which proposes to balance the autonomy of the regulator with political legitimacy, the framework law recommends a third party judicial review of the regulator's decisions.

It is evident from this section that these three central bodies have chosen to adopt the language of regulation defined through regulators even though their entry points have differed from each other. The Finance Commission has adopted and backed the all-in-one Maharashtra model, a managerial regulator for ensuring cost recovery from the WUAs and ensuring the commercial viability of irrigation. The Planning Commission, on the other hand, has tried to provide an alternative to the World Bank model by emphasising issues of institutional accountability and including various other aspects within the scope of regulation besides tariffs and entitlements. The MOWR framing has taken a middle ground between these two positions by placing a strong emphasis on the tariff role of the regulator. While the Finance Commission and the MoWR limit their frames of reference to the irrigation sector, the Water Group has tried to expand the scope of regulation by including various other functions such as environment sustainability, climate change etc. All of them have chosen not to use the language of tradable entitlements, an idea that is central to the Bank's conception of regulation. As regulation becomes increasingly mainstreamed into the national discourse, fundamental disputes are no longer about resistance to 'expert-led regulation' per se, but about its role and mandate in the water sector, and how to make them accountable in a democratic and federal framework.

4.5 Conclusion

In this chapter, I have argued that reform-led discourse of water regulation emerged in a particular context of policy and institutional congruence at the national level when the emerging global consensus on water coincided with the macro shifts that occurred following the post-1990s crises. With the rise of states as economic entities, the donors were able to use their financial strength to act as key purveyors for water reform in the states. The 1990 crisis also acted as a

catalyst for reforming several key public sector areas, but the first phase of roll out comprised only the core sectors such as banking, insurance, telecommunications and electricity. I argued that this rolling out created the ideational environment for concepts such as regulation, entry of non-state actors and private ownership rights to embed themselves in the policy and reform culture in India post the 1990s. The role of the State needed at that point to change from service provider to that of a facilitator. Therefore the need for 'independent regulation' emerged in the context of this changed role of the State.

I then traced the origins of independent regulation to the 1998 World Bank Review of India, which provided the momentum for the discursive shift in the Indian water sector. I argued that three key points define the Bank's articulation of regulation: the failure of the State water apparatus, diffusion of models, and the need for entitlements for water pricing and allocation. Regulation therefore emerged as part of a water reform package and is intimately tied to other institutional instruments, which came along with the need for an independent regulator. Therefore independent regulation is deeply entrenched in the ideology of roll-out neoliberalism and is a framework for restructuring the State-led water apparatus. This discourse of water regulation became further embedded in the water policy discourse of the country in its third phase. Here I focused on the three national bodies that have mainstreamed regulation through grant conditions (Finance Commission), plan proposals (Planning Commission) and policy frameworks (MoWR). This is also a vindication of the argument that expert-led regulation is becoming embedded in Indian water policy discourse.

This process of evolution was marked by an interaction of discourses that do not necessarily emanate from the water sector. The meaning of 'independent' regulation was primarily derived from other core economic sectors, especially the power sector. At the national level, this meaning-making was, however, constrained by the effects of federalism, which put water in the domain of the states. This also meant a greater role for donors than for the national bodies in defining the role and rationale for independent regulation. For the water sector, the national discourse of regulation, especially in its third phase, is more a refraction of the Maharashtra model than vice-versa. While the Finance Commission made Maharashtra's MWRRA into a model, the Sub-Group has

tried to address some of the limitations of this very model, grounding it in the federal and democratic framework. Moreover there is still a great deal of ambiguity about what regulation constitutes and how it needs to be institutionalised; the roadmap is unclear in the national discourse, mostly for the state specific nature of this sector. Despite the alternative proposed by the Water Group, regulation is constructed in the language of pricing and cost recovery with limited emphasis on questions of access and equity.

There are three broad framings of regulation that can be derived from this chapter. First is the World Bank idea of regulation, which is essentially situated at the intersection of the retreat of the State, private sector participation and the need to have an independent regulator to ensure credible commitment to investors and private sector participation. This framing is adopted in the national water policy, the *2006 Approach Paper* of the Planning Commission's *2010 Draft Regulatory Bill.* Independent regulation, therefore, is seen as an important constituent for private sector participation and investment. Second in the specific context of the water sector, the Finance Commission and the MoWR have advocated an irrigation sector regulator with prime responsibilities of setting tariffs and ensuring cost recovery. Regulation therefore forms a key element of their pricing reforms, but not explicitly through private sector participation in this sector. Third, the Sub-Group provides a more holistic perspective on regulation, and grounds regulation in the framework of accountability. Devising checks on the regulatory body through the body of elected representatives (SC) also signals the need to ground legislation in a democratic framework, a key point in the evolution of the regulatory framework in the Indian water sector in its current phase.

However these three framings have not displaced the expert-led character of regulation. The Bank and the Finance Commission make explicit the need for 'technical experts' for water regulation, who have the knowledge to determine prices in a 'scientific way'. The Water Governance group has tried to tone down this expert-led discourse through arguments of participatory processes and democratic oversight, but does not overrule the technical nature of water regulation. Here too regulation is rationalised through arguments of appropriate pricing, which needs to be 'apolitical' and scientifically done. Regulation is

therefore equated more with pricing and incentive structures, and less with aspects of social regulation i.e. access and equity.

It is this economic view of regulation, emanating from the neoliberal logic of public sector management, stressed and pushed for emphatically in the World Bank's approach that has made its way into the Maharashtra water sector. The next chapter provides the context for water reforms in Maharshtra and begins to draw the regulatory space in the water sector. It highlights the plurality of regulation(s) that might exist in the working of the water sector owing to its social, political and historical context. It is followed by chapters that outline how this reform-led regulation is translated in Maharashtra.

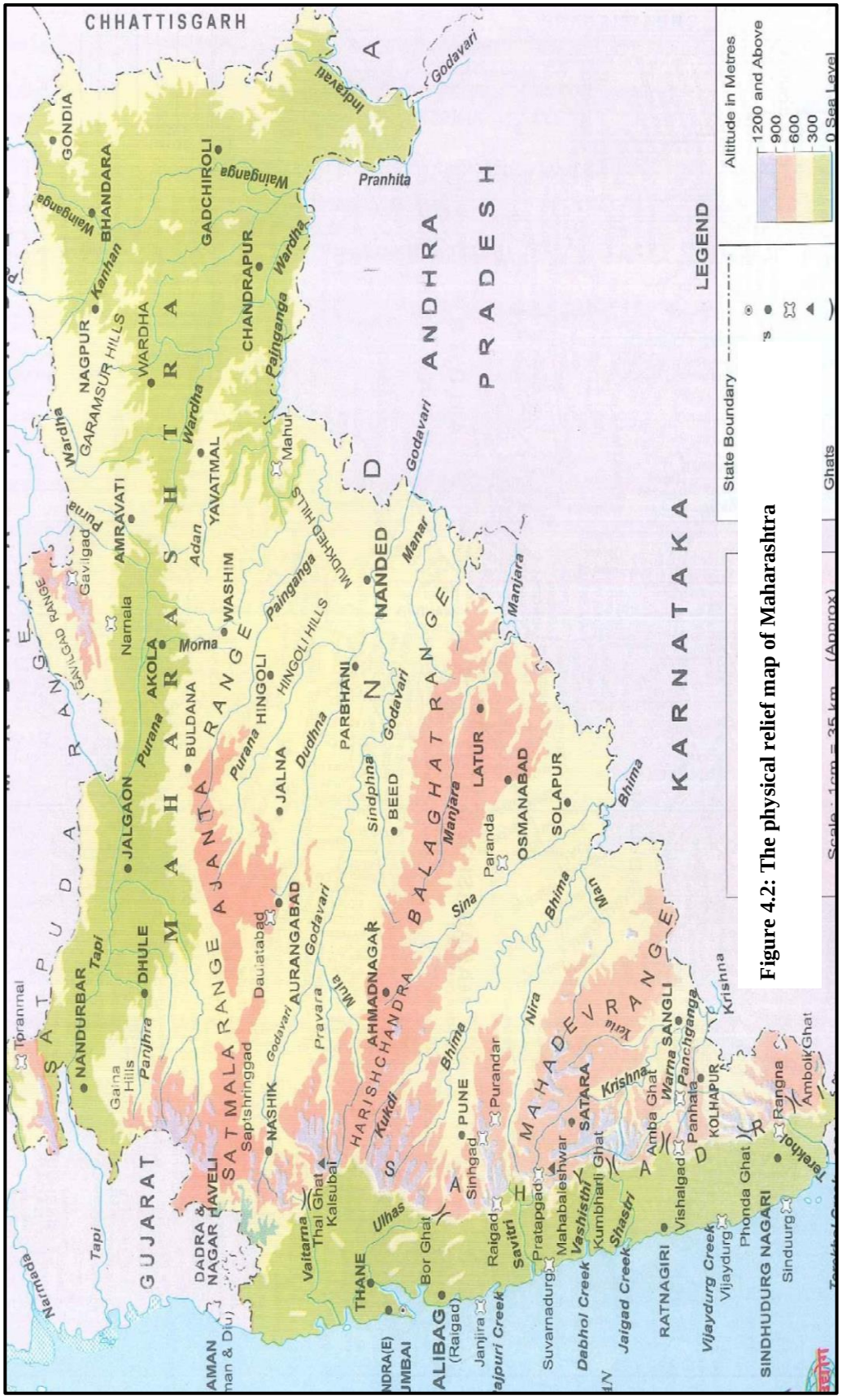

Figure 4.2: The physical relief map of Maharashtra

5. The Nested Context of Maharashtra: Irrigation and Development

> Maharashtra is not an irrigation state! It is strange that most of the reforms in the water sector are happening in a state with the lowest irrigation potential in the country.
>
> Member MWRRA, Mumbai (January, 2012)

Introduction

My discussions with several policy officials in Mumbai underlined the urgent need to optimise the use of water resources in Maharashtra. The fact that Maharashtra has the lowest irrigation potential in the country was most often the strongest defence lined up in favour of the reforms. With an irrigation potential of 17.9 percent, as against the national average of 49 percent (Government of Maharashtra, 2012; Dandekar and Naravade, 2013), harnessing water resources is at the heart of water infrastructure development in Maharashtra. Since a large part of Maharashtra comes into the rain shadow belt, droughts[46] have not only been a recurring feature of its geography, but also the strongest drivers for the state-led irrigation projects in this state.[47] This state also enjoys the reputation of having the largest number of dams[48] in the country. While irrigation is scarce, the state for a long period has supported (and encouraged) the cultivation of water-intensive sugarcane, much of which grows in the semi-arid region of Western Maharashtra. This pattern is sustained by a complex history and politics of agrarian transformation, regional development and politics of the state.

In the previous chapter, I highlighted how water regulation reform is essentially about the irrigation sector. In this chapter, I build the context for studying water regulation reforms in Maharashtra. After giving a brief background of the state of Maharashtra (Section 5.1), I turn to the sugarcane belt of Western Maharashtra

[46] Droughts can be distinguished as famines (occurring in the periods before independence), sustained periods of scarce rainfall (biophysical aspects due to the nature of geography) and social distribution of access (governance structures and power politics). Increasingly, droughts in the post-independence period are a combination of the last two aspects: scarce rainfall which is amplified through skewed access and social distribution of the resource. For contextual and political readings of scarcity in other parts of the country, see Mehta (2005) and Jairath (2003).

[47] This is not to suggest that that there are no initiatives beyond the state-led irrigation projects. I discuss two of them in detail in Section 5.2.3 of this chapter.

[48] As per the National Register of Dams, the state had 1,845 dams by the year 2009. (Dandekar and Naravade, 2013).

(Section 5.2), where the local fieldwork took place. Maharashtra has a varied geographical profile and it is difficult to cover the development trajectory of each of the regions for reasons of space and consistency. I therefore focus on Western Maharashtra. In this chapter, development refers to the ensemble of rationale and practices "to determine better life for everyone" (Peet and Hartwick, 2009: 1). However there are different ways in which this 'better life' is interpreted and it is a contested issue. Therefore, in this chapter, I use a broad definition of development, inspired by interventions from above and below to ameliorate conditions of the 'subject population'. These cover the diverse rationales ranging from infrastructure building to socio-ecological concerns.

In this chapter, I argue that "improvement" has not only been at the heart of development of water resources, but also in the subsequent proliferation of socio-economic development in this region. By focusing on four specific interventions, I show how development of water resources was most often attached to disparate ambitions of securing colonial rule, revenue extraction (for the colonial State), stabilising political ambitions (postcolonial State), and challenging the status quo (civil society) [49]. This is critical in understanding the *translation* of reforms as these factors impinge on how regulation is understood, interpreted and negotiated in contemporary times.

5.1 The Making of Maharashtra

The Indian State of Maharashtra has a creditable development trajectory (Government of Maharashtra, 2002). It is regarded as one of the frontline states for economic development in India, with Mumbai being the finance capital of the country. Maharashtra is the second largest state in terms of population and third largest in terms of area in India. Carved out of a linguistic imperative in May 1960, the state of Maharashtra was created by "cobbling together"(Government of Maharashtra, 2002: 42) units from the present day states of Madhya Pradesh (Central Provinces & Berar in British India), Andhra Pradesh (the *Nizamiyat* of Hyderabad in British India); Vidarbha (Nagpur and Amravati division) belonged

[49] I do not intend to trace these developments in a linear fashion as some of the initiatives run parallel to each other, especially in the post-independence period. In Maharashtra, there are several other water management practices, such as the *Phad* system in Nasik, or the watersheds in Ahmadnagar, but I do not discuss them in this work because they bear no direct relation to the subject of this study.

to the Central Provinces, and Marathwada (Aurangabad) was part of the kingdom of Hyderabad (see figure 5.1).

These socio-cultural units have also morphed into the six revenue divisions of Aurangabad, Nagpur, Amravati, Konkan, Pune and Nasik. The divisions of Pune and Nasik comprise the geographically contiguous and 'developed' belt of Western Maharashtra (see figure 5.1). The current study is located in the Jahot command area, which is situated on the border of Pune and Ahmadnagar districts. In this chapter, I primarily focus on Western Maharashtra for its historical trajectory of development and irrigation in Maharashtra.

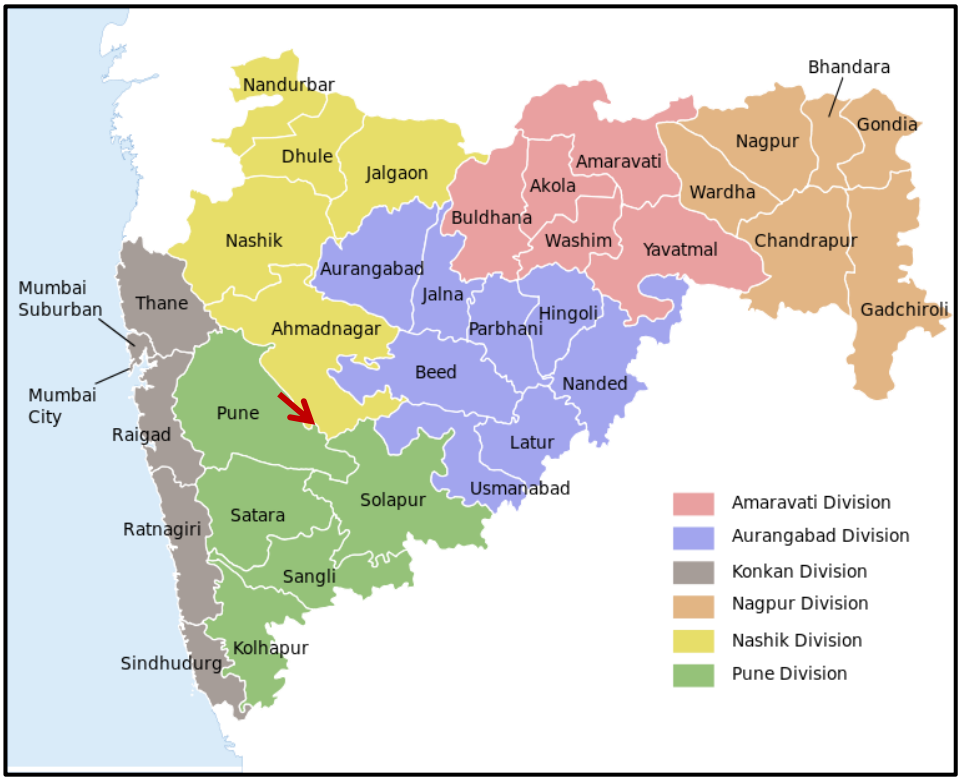

Figure 5.1: District map of Maharashtra
(with location of the Jahot canal system)[50]

Prior to independence, these states were either princely kingdoms or under the direct dominion of the British rule. Thus they had different administrative and agricultural practices[51]. While the agrarian reforms following independence were

[50] https://www.maharashtra.gov.in/1125/Home (Accessed 12/10/12).

[51] For instance, the Konkan region had a double tenure system called *khoti*, while Western Maharashtra practised the *Ryotwari* system. Vidarbha, which belonged to the Central Provinces, and Berar had also *Ryotwari* alongside *Malgujari* systems (Lele, 1990). As for Marathwada, which was carved out of the Nizam of Hyderabad's principality, it had uneven distribution of land marked by inequality (Government of Maharashtra, 2002).

introduced to address issues of inequity, land ownership and fragmentation, their impact varied in each of these regions (Government of Maharashtra, 2002). In fact, prior to 1960, three irrigation Acts were in place: the Bombay Irrigation Act (1879) for the Bombay Presidency; the Central Irrigation Act (1935) for Vidarbha (Northeast part of Maharashtra) and the Hyderabad Irrigation Act for Marathwada. These Acts were later replaced by the rules of Maharashtra Irrigation Act of 1976, which largely govern the irrigation practices in the state[52].

In the early years of independence, writes Kamat (1980), the economic development of Maharashtra was largely concentrated in the industrial hub of Mumbai, with political leadership divided between the urban industrial elite in Mumbai and the agrarian rural elite from the Maratha-Kunbi caste cluster (see Omvedt, 1973; Kamat, 1980; Lele, 1990). He further argues that the economic development of Maharashtra, excluding Mumbai, was dominated by three regional forces: Marathwada (Aurangabad division), Western Maharashtra (Pune and Nasik) and Vidarbha (Nagpur and Amravati divisions). Their conflicts originated in demands for "economic development but they often [had] overtones of socio-cultural identities" (Kamat, 1980: 1673). Prior to the formation of Maharashtra, there was widespread apprehension regarding the creation of a predominantly Marathi-speaking state from regions of Marathwada (part of Hyderabad) and Vidarbha. In order to allay these fears, Article 371 (2) provided certain special powers to the Governor to oversee the balanced development of these regions (see Prabhu and Sarker, 1992).

These development feuds, to this day, simmer beneath the political and economic growth of Maharashtra. Even during my visit, the farmers from Vidarbha (Nagpur and Amravati divisions) complained of being the "step-children of Maharashtra" (KI37). In recent years, the mounting crises of suicides amongst cotton farmers has brought Vidarbha to the centre stage of uneven development in Maharashtra. This lopsided account of regional development is significantly intertwined with the politics of Maharashtra, which has divided the state into 'us' and 'them'. For example, the Vidarbha farmers known as *kastkars* were quite assertive that they cannot be compared to "those [Western Maharashtra] farmers who are rich and

[52] Alongside the 1976 Act, other Acts, such as the Bombay Canal Act 1879, also provide the governing framework for irrigation.

have political support", while the farmers in Ahmadnagar, known as *shetkaris*, would dub the other set as "lazy people who do not know the value of water" (Field Journal December 2011). It is interesting to see how these entrenched ideas and representations are naturalised and institutionalised into some of the very much contested decisions about water use, water conflicts and irrigation in the present times (Chapter 6).

While agriculture is not a major driver of the much-celebrated economic growth in Maharashtra (Lele, 1990; Government of Maharashtra, 2002), it is the driving factor behind the political edifice of the state, which for a long time has been dominated by the politics of the sugar lobbies from Western and Southern Maharashtra (Government of Maharashtra, 2002). It is these lobbies that have brought to the centre stage some of the most powerful leaders in Maharashtra and in national politics.[53] I now turn to this politically powerful and economically prosperous region of Western Maharashtra, where this study is based.

5.2 History of Irrigation Management and Practices in Western Maharashtra

Western Maharashtra comprises the administrative divisions of Pune and Nasik and falls in the Deccan trap area, also called the classic famine belt (Rath and Mitra, 1989; Attwood, 1992). Famines, and now droughts, are a central feature of the topography of this region. Part of the Maratha kingdom in the 18th century, this region formed the part of the Bombay Presidency after the colonial annexation in 1818. The Deccan lies in the rain shadow area of the coastal mountains, and has an uncertain rainfall pattern. Before the late 19th century, i.e. before the large-scale irrigation works were built, well irrigation or medium scale diversion networks called *bandharas* (temporary mud embankments across the river bed) were the source of irrigation in this region. Wells, which were privately owned, were the sole source of water and these were highly dependent on rainfall (Attwood, 2005). Despite the extension of irrigation networks over the years, a

[53]To name a few: Vasant Patil (Chief Minister of Maharashtra 1977-78); Sharad Pawar (Chief Minister of Maharashtra at several points from 1978 upto early 1990s. He is also the President of the Nationalist Congress Party (NCP), which currently rules Maharashtra in coalition with Congress party); Ajit Pawar (nephew of Mr. Sharad Pawar, currently the Deputy Chief Minister of Maharashtra. He is also the owner of a sugar factory in Karjat taluka of the Jahot command.). Late Mr. Gopinath Munde (ex- Deputy Chief Minister of Maharashtra; he was a prominent politician of the Bharatiya Janata Party).

large proportion of this region is still under well irrigation even in contemporary times (Government of India, 1995).

Speaking of the Ahmadnagar district (where this study is located), the Imperial Gazetteer (1909) notes that this district is liable to droughts, and numerous famines. The awful calamity of 14th century called the *Durga Devi* famine, which lasted for twelve years, and the *Mahadurga* famine in 1640 are but a few examples of the devastating famines of the medieval Deccan (Enthoven, 1909; Attwood, 2005; DeSouza, 2010). Even during the colonial period, famines dotted this region (Indian Irrigation Commission, 1903a; Narain, 2003; Attwood, 2005), which eventually became the reason for state intervention in the form of protective irrigation works (Enthoven, 1909).

The British rulers' initial redress strategy for famine-affected areas was limited to extending *takavi*[54] loans to the cultivators for well construction (Attwood, 1987). However the Deccan Riots (1875), a peasant rebellion in the face of massive immiserisation, pressed the rulers to consider effective strategies to stabilise their rule. These riots also revealed the failure of the rulers' modernisation strategy, which initially focused on reforming the land revenue system through the taxation of individual peasants (Bolding et al., 1995).

With the Deccan riots, the emphasis shifted from reforming revenue systems to using western technology such as irrigation and railways, which would result in "more modern and more productive forms of agriculture" (Bolding, Mollinga, & Van Straaten, 1995 :810). This would ensure a stable revenue stream to the colonial rulers and also address situations of political and economic unrest. Thus, technology became the potent purveyor of modernisation, with the inherent ambition of securing and stabilising colonial rule (Stone, 1984; Bolding et al., 1995). The Famine Commission (1880), which outlined the colonial policy for dealing with recurring famines, drew attention to the indirect returns from the irrigation works through savings on famine relief expenditure. It recommended that the government take steps in anticipation of famine and provide relief. It also

[54] Loans advanced by the government to the farmer to finance the construction of wells, purchase bullocks or plant a new crop. These loans were often advanced for famine relief and the repayment was collected through the land revenue machinery. In a series of famines from 1899-1902, *takavi* advances were above 20 million rupees, from which 3.75 million rupees were meant for repairing and building wells (Mann 1925 cited in Attwood 1992).

recommended the extension of irrigation and railways to encourage diversification of occupation (Narain, 2003).

This momentum was built specifically into the report of the Indian Irrigation Commission (IIC) Report (1901-1903). The IIC undertook extensive analysis of irrigation across several provinces of British India to determine the potential and possibility of extending irrigation networks (Indian Irrigation Commission, 1903a). In its report, the IIC outlined three advantages of irrigation works: an increase in the general wealth and prosperity of the community through increased crop production; water recharge through large storage networks; and protection against famine. Recognising the need to include the Deccan trap area within the protective belt, it stated:

> We have already observed that apart from the question of famine protection, there is no reason why the[S]tate should accept a permanent charge on the revenue for the sake of increasing the productiveness of land belonging to private owners […] [T]he reservation in respect to famine protection is however all important. The obligation of the [S]tate to incur whatever expenditure that may be necessary to save life during famine involves future liabilities that cannot be evaded, and of which full account must be taken[…] For the present, we may disregard the indirect cost of famine to the [S]tate, and the loss and misery which famine imposes on the people, and confine ourselves to the purely economic question of comparative demands on the tax payer, involved in an immediate expenditure and in the future relief of the distress which may be anticipated if these works are not constructed (Indian Irrigation Commission, 1903a: 30).

Protective irrigation or works[55] were thus envisaged as "works for protection against famine and not necessarily to bring revenue to the state" (Narain cited in Narain 2003:20). The Commission essentially set out to measure the cost of construction of such works against the future costs of providing relief. The long discussions and testimonies documented during the tour of the members bear evidence to this fact (Indian Irrigation Commission, 1903b). The IIC Report, which stratified and categorised the Indian topography, was essentially a cost-benefit analysis for irrigation work. It conceded that providing for protective works might not be directly productive or remunerative for the government in comparison with the North Indian irrigation networks, which were essentially constructed on productive lines (Indian Irrigation Commission, 1903a).

[55] Several reservoir systems and canal works were started by the British for famine protection: the Mutha canal (1860), the Khadakvasla dam (1879) and the Nira Left Bank Canal (1885).

This is how the concept of protective irrigation[56] emerged as a significant feature of British "colonial hydrology", an intervention which altered Deccan's "fluvial and social world" (D'Souza, 2006: 625). Thus, extension of irrigation works in the Deccan area became a part of the mitigating measures of the colonial policy, with the dual ambitions of securing colonial rule and generating revenue (Bolding et al., 1995; Narain, 2003). Initially the protective works were promoted for subsistence cropping, but towards the turn of the twentieth century a phenomenal shift took place on the Nira Canal (Pune district, Maharashtra) where farmers began to experiment with sugarcane cultivation (Attwood, 2005). This experiment was to change the agrarian and political alignments of this region for years to come.

5.2.1 The irrigation frontier: protective irrigation and sugarcane cultivation

Despite the construction of canal networks, one of the significant challenges faced by the irrigation bureaucracy was the lack of demand for water in years of normal rainfall. Maintaining storage reservoirs and networks, in this case, was expensive for the establishment and also led to a reduction in budget from the central government. Mr. Visvesaraya[57], in his testimony to the IIC, lamented:

> Water is very expensive in Bombay [Presidency] […] It may be roughly stated that on account of the great cost of storage, water supply is three to six times more expensive here than in other irrigation systems […] I think working on productive lines, we should not lock up water on the chance of famines. We should every year make an estimate of the water available for high class crops and in famine years make some concession in favour of dry crops (Indian Irrigation Commission, 1903b: 97-99).

In this region of Deccan, farmers cultivated sorghum and millet, and waited for the rainfall before placing a demand for water (IIC 1903b). The water retentive capacities of the black soil could support one season of crops in years of normal to good rainfall. In these years, maintaining water in storage reservoirs was expensive. The solution, for Mr. Visvesaraya, lay in creating conditions for

[56] A specific form of large-scale irrigation found in semi-arid and drought prone areas of the Indian sub-continent. These systems are designed to "protect" areas and distribute available water (in rivers or storage) thinly over a large area in equitable manner (Mollinga, 2003; Narain, 2003). Under British colonialism, protective irrigation was specifically targeted at famine prevention, in present times it is generically used to indicate irrigation systems in drought prone areas with specific technical, organisational and socio-economic characteristics (Narain, 2003). They are also referred to as "water constrained systems".(Tilak and Rajvanshi, 1991: 1)

[57] He is also called the Father of Engineering in 'Modern India'.

permanent demand for water through a crop which had flexible planting and harvesting times, as opposed to the dry crops (Bolding et al., 1995). The answer was the cultivation of water-thirsty sugarcane through the block system of water delivery.

A block is defined as "a portion of land for which long term irrigation sanction is given" (Patil and Lele, 1994: 23). Under this system, the farmers were required to enter into a fixed period, six- year contract with the Department to receive water. The Department was bound to supply water and farmers were required to pay for it. This system thus became a source of perennial irrigation in the famine belt of the Deccan. Under this system, one-third of the land was cultivated with sugarcane and two-thirds with other food crops (Attwood, 1987; Bolding et al., 1995). The *Saswad Malis*[58], who migrated from their native town of Saswad near Poona city (now Pune) to the Nira canal capitalised on this opportunity. The abundant yet underutilised canal water provided promising opportunities for this small, enterprising community, which was skilled in intensive irrigation of garden crops. The experiment was to use the canal water initially used for growing subsistence crops such as millet and sorghum for the cultivation of sugarcane (Visvesaraya, 1951; Attwood, 1987; Bolding et al., 1995)[59].

Thus the block system shifted extensive irrigation (for subsistence) to intensive irrigation (for cash cropping). This system enabled the farmers to move towards high value crops, and also served dual aims for the colonial rule. It addressed the problem of famine protection in two ways. With canal villages cultivating sugarcane alongside food crops, this agricultural expansion led to demands for labour, causing farmers from dry villages to migrate to productive regions (Gadgil, 1948; Attwood, 1987). It stabilised revenue for the British treasury, and

[58] garden cultivators from the *Mali* (gardener) caste.

[59] There is considerable debate over the ramifications of this shift; some scholars from the Dependency school argue that this was an imposition from the British to extract revenue, which further aggravated the pauperisation of the peasant economy and created pockets of prosperity. For instance, Whitcombe (1993) makes this case in her analysis of colonial policy in North Western India. Others, such as Attwood (1992), argue that such theorisations miss out on local innovation, and read the development of sugarcane cultivation as an attribute of the business enterprise of the local population (Attwood, 2005). For colonialism and the sugar industry, see Chithelen (1985) and for links between sugarcane cultivation and irrigation modernisation, see Bolding et al (1995).

previously wasted water now brought in high returns. Once these objectives were met, several other propositions proposed by Visvesaraya to reform the water delivery system were not pursued further, as the British were not keen to jeopardise their fiscal interests (Attwood, 1987; Bolding et al., 1995). However, intensive irrigation under the block system went against the principles of extensive irrigation for famine protection/subsistence cropping. The IIC, however, declared that the "system producing the best commercial results would also be the most protective system" (IIC 1903a:70). This is how protective works were transformed into productive works in the Bombay Deccan (Attwood, 1987; Bolding et al., 1995).

This introduction of the block system was also accompanied by certain techno-managerial interventions to curtail the sporadic demand for and distribution of water. This entailed the control of water discharges through modular structures and the introduction of volumetric supply for water efficiency. However, volumetric pricing and modular structures encountered substantial bottlenecks. The IIC held extensive discussions on the modular structures and gates, which could enable volumetric delivery of water, but without any substantive conclusions (Indian Irrigation Commission, 1903b). In fact, during his service tenure in Pune, Visvesaraya made several experiments of this kind on the Nira Canal, but the British officers found them to be inefficient or expensive (Indian Irrigation Commission, 1903b; Bolding et al., 1995). This did not prevent the subtle encouragement of sugarcane cropping, which had already rolled out "modernisation" (Bolding et al., 1995) of the agrarian culture through the block system. This pattern of water distribution and cash-crop cultivation eventually spread to other parts of this region. For instance, the opening of the Godavari and Pravara (Ahmadnagar) canals in the early twentieth century played a vital role in the extension of sugarcane cultivation and the development of the sugar industry in the 1930s[60], or what Attwood calls the "irrigation frontier"(Attwood, 1985:

[60] I do not argue that the extension of canal networks was the sole factor responsible for the extension of sugarcane cultivation in the Deccan region. There were other socio-political and economic factors that aligned with this development. For instance, the Deccan Riots of 1875 prompted the colonial government to re-examine money-lending practices in the region. Similarly the colonial protective tariff policy for sugar contributed to the development of sugar mills in Maharashtra (Baviskar, 1980; Chithelen, 1985).

66). The first sugar cooperative – the Pravara Cooperative sugar factory – was set up in Ahmadnagar district in 1950.

Canal irrigation was certainly not a neutral technology, as it was designed to serve the interests of the Empire. The extension of canal networks essentially became a premise to operationalise rule from a distance. Irrigation was not only rendered increasingly technical through large scale networks: it also led to "configuration of habits, aspirations and beliefs" (Li, 2007: 5) favouring cash crop cultivation. The extension of canal networks also led to institutionalisation of the water bureaucracy through the Bombay Irrigation Act (1879).

The productive dimension had an inherent bias towards stressing irrigation and economic activities and downplayed the polyvocal properties of water especially as an as important element in the lives of the people, the society and ecology. The Irrigation Acts, which developed over the historical continuum from the colonial Acts, were essentially geared to maintain the use of surface water within the state territory, and laid down rules and restrictions for diversion and impoundment (Government of India, 2010a).

The cultivation of sugarcane stabilised colonial revenues on one hand and ensured prosperity for the farmers on the other. Thus irrigation became one of the central instruments of colonial rule, burdened with contradictory goals of "famine prevention, revenue stability, the settling of unruly tribes, expansion of cultivation, extended cultivation of cash crops, enhanced taxable capacity, improved cultivation practices, and political stability" (Stone, 1984: 9).

This "fundamental duality" (Bolding et al., 1995: 810) in the colonial regime is also symptomatic of the contradictory nature of the State in the water sector. It has diverse objectives, but central to each strategy is a form of control, be it through discharges of water, or controlling and modernising the agrarian pattern. While sugarcane cultivation spread rapidly across Western Maharashtra, the problems of water distribution, salinity, land degradation and discipline, i.e. inability to exert control on cultivators (PWD 1910 cited in Bolding et al.1995: 827), within the system largely persisted, and continues to do so in present times. I explore this further in Chapter 7 of this work. Colonial intervention through

large scale irrigation gave birth to distinct patterns of regulations, which are manifest even in the current case of regulatory reforms in Maharashtra. For instance, volumetric pricing, which was subject to extensive discussion among the members of the Indian Irrigation Commission (1901-1903), also forms part of the recommendations of several contemporary committees and commissions, including the Vaidyanathan Committee Report on water pricing (Government of India, 1992), and the reports of several other Irrigation Committees and Commissions appointed by the Government of Maharashtra (Joy and Kulkarni, 2010). It is also the cornerstone of the reform-led entitlement policy.

The shift in the definition from a protective system into a remunerative system had fundamental implications for the post-independence period. The Government of India's irrigation policy (1972) emphasised the shift from protective dimensions of irrigation to "a means for attaining greater production of food, fibres and oilseeds" (Mollinga, 2003: 14). While this drive for self-sufficiency drove the Green Revolution, it was also complemented by the cooperative movement in this region of Maharashtra. This section showed how the colonial rulers encouraged sugarcane cultivation at the turn of the 20th century[61]. This rule thus brought in a "new and distinct form of developmental state" (Mosse, 2003: 125), which was most fully expressed in its post-independence avatar, where control over water moved upwards. The post-independence project of national development justified a massive expansion of state bureaucracy into everyday rural society through control of prices and fertilisers, power subsidies, and control over irrigation (ibid). I now turn to this phase of development in the next section.

5.2.2 Engineering Development

In the period following independence, the overarching national policy with its emphasis on engineering and infrastructure also aided this spread of sugarcane cultivation. To cultivate a perennial crop such as sugarcane, perennial sources of irrigation were required. This meant harnessing the untapped potential of water

[61] As I have already argued there were other factors responsible for the growth of sugar cultivation and industry during the colonial period. For instance, Baviskar (1980) and Attwood (1992) attribute the birth and extension of sugar cooperatives to the business enterprise of the Malis and the emerging class-caste complex between the Brahmins-Malis-Marathas and other non-Brahmins. I do not dispute their claim, and also touch upon these issues in Chapter 7, which highlights the socio-political dynamics of sugarcane cultivation in the Jahot LBC. For this chapter, I have primarily concentrated on the irrigation-sugar cooperatives link.

sources through large storage reservoirs, sub-surface water and/or groundwater. The state of Maharashtra was no exception to this transformation (Attwood, 2005). The extension of irrigation activities also brought in a sizeable portion of land into cultivation under the canal irrigation: the construction of a series of projects including the Jahot system (where the current study is located) also started in this period. In the irrigated tracts of the erstwhile Western Deccan, now Western Maharashtra, sugarcane became the chief cash crop (Baviskar, 1980), which favoured extension of irrigation services. Dams were also an attractive enterprise for politicians and technocrats as they provided the leverage to extend 'political and private' control over resources (McCully, 2001)[62].

In the post-independence phase, the emphasis in Maharashtra, as in other parts of the country, was on food sufficiency, and irrigation was an important input to boost agricultural production. However the geographical challenges of the state caused the Maharashtra Irrigation Commission (1962) to cap the full irrigation potential of the state to a mere 30 percent of the cropped area (Joy and Kulkarni, 2010). This required optimising water use and tapping the irrigation potential of the state. As I explained in the previous chapter, this 'water development' meant harnessing water resources than optimising its use and distributive allocation. In present times, the emphasis on developing storage capacity is one of the moot points of the engineering perspective on water, and was fairly evident during the fieldwork. The consultant at the Regulatory Office advocated vehemently that that development of storage capacity - i.e. more dams - was the only way to address water woes in the country. Thus this engineering perspective is still fairly dominant in the water resources sector in India.

Alongside this drive for water optimisation in the early decades of independence, two simultaneous developments followed: the growth of the sugarcane cooperatives in the Deccan trap region, now Western Maharashtra, and further institutionalisation of the demand-managed system of irrigation i.e. *shejpali,* to which I now turn.

[62] During the period 1970-89, 4,921 dams were built in India (Rangachari et al. cited in Attwood 2005).

Institutionalisation of hydrocracy: shejpali or demand managed irrigation

The block system, which provided a win-win situation for the farmers and the colonial government, was the result of the peculiar problem of wasted water, whereby farmers did not demand water and waited for the rains until the last minute (Indian Irrigation Commission, 1903c). While the block system started in the late 19th and early 20th century in sugarcane tracts of the Western Maharashtra, other protective irrigation works were primarily covered under the rules of the Bombay Irrigation Act (1879), which was the precursor to the Maharashtra Irrigation Act 1974. *Shejpali*[63], or the practice of demanding water, is largely framed on the 1879 Act (Brewer and Raju, 1995) and still governs water management practices even today.

The system of watering by turns is called *shejpali*. Under this system, the watering of crops is tied to a specific number of rotations from the canal, and the farmer is required to apply to the Department for water every season before the rotation begins. This system gives enough power to the Department to control water allocations in several ways: first, the farmers have to apply for sanctions in each season (Brewer and Raju, 1995; Joy and Kulkarni, 2010); second, the Department needs to sanction the area and type of crops; third, they regulate the demand for water by determining the quantity and time of supply (Brewer and Raju, 1995; Narain, 2003); and fourth, the Department also has the right to reject the application if the farmer has defaulted on previous payments (KI48).

In contrast to the block system, which guaranteed the quantity of supply over a period of time, the *shejpali* system does not carry any such guarantees of water delivery (Brewer and Raju, 1995). Although under the *shejpali* system the dates for water turns are fixed, there is a great deal of uncertainty because the onus to provide water is not as binding as in the case of the block system. This uncertainty of supply, in the context of large-scale irrigation systems, can also promote rent seeking behaviour among officials (Wade, 1982; Moore, 1989). Moreover, there are no restrictions on the time a cultivator could take to irrigate the sanctioned area. This led to the rigid *shejpali* system, or rotational water supply, where the time for taking water is also fixed, but this system has not been

[63] A system of taking turns for water; s*hej* means turn and *pali* means water (Narain, 2003). System of irrigation in Maharashtra and Gujarat (Brewer and Raju, 1995).

implemented uniformly in the state (Pike, 1995; Narain, 2003). Besides the degree of uncertainty in water supply, the *shejpali* system also places greater onus on the state machinery to deliver water to each farmer and to monitor water theft.

The geographical peculiarity of the Bombay Deccan introduced the system of water on the basis of demand. The primary concern of both these systems, the block and the *shejpali*, was to put 'scarce water' to full, and efficient use. This is evident from the following quotation, which captures the essence of the *shejpali* system:

> The irrigation Engineer has to see that the total water available with the storage along with the river gains is fully utilized up to June of every year and no drop of water remains unutilised; at the same time his foremost duty is to see that all the committed irrigation is fully satisfied according to the rules and practices of irrigation and no crops starve for the want of water. (Gandhi cited in Narain 2003: 60-61).

With increased responsibilities of the State, an institutional set-up geared to maintain this "workload" was also required. The system placed a great deal of pressure and onus on the Executive Engineer and the subordinate officials. It also made the Canal Inspector, the last player in the irrigation system, an extremely significant figure in water delivery. His duties included: preparing the *palipatrak* or list, for farmers on every outlet; setting a certain time for the irrigation of the sanctioned area; releasing water as per the turns of the farmers on a tail to head basis; ensuring collections and monitoring that the area/crop irrigated are as per the approval granted (Patil, 1988; Narain, 2003)[64]. Clearly, the implementation of these functions is far more complex than the step-by-step process outlined in several official reports.

In fact, entitlements are primarily targeted at changing the *shejpali* system (Chapter 7), which has placed substantial onus for water delivery on the Department. Though Saleth (2007), in his support for the water rights system, argues that *shejpali* has an in-built mechanism of water rights through its demand-managed system, he overlooks the significant role of the bureaucracy in running this system. The system (irrigation bureaucracy) based features (Abrams, 1988) of the State, most notably proliferated under the *shejpali*. The irrigation bureaucracy had to engage with every individual farmer to collect applications,

[64] For the technological implications of *shejpali* and its calculations etc., see Narain (2003).

deliver water deliver and collect water charges, a combined practice that many state officials call the "headache of the State" (Field Journal, April 2012). However this practice also extended the powers of the State and made the farmers both legible and amenable to improvement; the State now moved into the domains of the rural society through demand processes, as outlined above. This also preserved State domination, which was pervasive under the colonial rule, as the authorities determined the nature, quantity and time of water supply. It simultaneously helped in created the vision of the *shaasan*, that majestic institutional structure which represented itself through the wry and mundane practices of guage registers, patrols, demand collection, and the significant penal powers of the State in times of payment arrears.

Reforms, by way of entitlements, seek to address these discrepancies inherent in the *shejpali* system. They seek to convert this overgrown bureaucracy into a service agency whereby a system of water rights will ensure the certainty and quality of water supply. However, this translation, as the next chapters will show, is peppered with inequities between big and small landholders across the canal system. Another important driver for this skewed access is the power of the sugarcane cultivators, which is inevitably tied to the growth of cooperatives in this region.

The fruits and fallacies of irrigation: sugarcane cooperatives and raajkaran (politics)

When Visvesaraya proposed the block system to the IIC in 1903, he had studied the *Saswad Malis*, who had migrated to the Nira Canal and started cultivating sugarcane (Indian Irrigation Commission, 1903a), and pioneered commercial farming in this region.(Baviskar, 1980; Attwood, 1987). While cooperative credit societies emerged in response to peasant immiserisation, with the rapid spread of sugarcane cultivation, they were increasingly dominated by the sugarcane farmers. For instance the membership of Big *Bagaitdar* (large landholders) societies was restricted to sugarcane farmers cultivating ten acres of land or more of sugarcane (see Baviskar 1980). There is a strong relationship between the extension of irrigation facilities and the burgeoning of sugar cooperatives in this region of Maharashtra (Rath and Mitra, 1989; DeSouza, 2010) . For instance, the four northern talukas of Ahmadnagar district (where the current study is based) - Kopargaon, Shrirampur, Sangamner and Rahuri - witnessed rapid expansion of

sugarcane cultivation as they prospered under the Pravara canals in the early decades of independence (Baviskar, 1980). Most of the cooperative sugar factories in Ahmadnagar were established in the interests of the sugarcane farmers (ibid).

Until the Indian Independence in 1947, sugarcane factories and cooperatives were largely privately owned (Rosenthal, 1974), and in the first few decades after independence, they were on the decline until the central government intervened through loans[65], and guaranteed market prices The cooperatives also formed an integral part of Congress' vision for rural development (Lalvani, 2008). Thus started the great expansion in cooperative movement, in congruence with the extension of irrigation networks in the Maharashtra. The construction of several canal systems, which today support the sugar pockets, started during this period. For example, this was when the systems of Mula, Jahot, Waghad and Mangi (Western Maharashtra) were built. The cooperatives extended rapidly all over India, and by the year 1977-78, Maharashtra had 56 operating cooperatives - the greatest number in the country – with the majority of them located in the Ahmadnagar district (Baviskar, 1980). Between 1960-61 and 70-71, sugarcane production doubled in terms of area as well as volume of production (Lele, 1990).

The expansion of cooperatives[66] has two significant implications for the irrigation services. One, since sugarcane required perennial irrigation sources, canal development and sugarcane cultivation went hand in hand, especially in this belt since the soil features were appropriate for sugarcane cultivation. Where canal irrigation was deficient, wells and groundwater sources were harnessed to support the yield (Jyotishi and Rout, 2005). Moreover, agricultural and power subsidies played a substantial role in exacerbating this groundwater extraction (Narayanamoorthy and Deshpande, 2005). Second, as noted in the previous section, cash crop cultivation also created pockets of prosperity and power to the extent that the fortunes of state politics, at one time, were determined on the

[65] For example, the establishment of rural banks for addressing problems with agricultural credit.
[66] There are also other kinds of cooperatives, which operate at different levels (village or multi-village) and in different sectors (credit, dairy development, marketing federations). See (DeSouza, 2010). For instance, in my field site, the cooperative sugar factories also had an extended arm in the area of rural credit (Field Journal, January 2012).

backs of sugar lobbies (Rosenthal, 1974; Kamat, 1980; EPW, 1987; Mohanty, 2009).

Given the large scale effects that cooperative factories had on the rural population, they became the local opportunity structures, which steered the politics at the *taluka* (sub-district) and district level (Rosenthal, 1974). Baviskar (1980) reflects on the rise of this capitalist peasantry, or the 'bullock capitalists',[67] (Rudolph and Rudolph, 1987) and their social power:

> Wherever big cooperatives such as sugar factories have emerged, their leaders tend to monopolize important positions of power in other spheres as well. Those who do not control such cooperatives lack opportunities of competing [sic], leave alone of winning, against the powerful cooperative leaders. If sugar cooperatives have been instruments of development, politics is the process which has sustained this development (Baviskar, 1980: 111-112).

Even from a comparative perspective, the growth of cooperatives, which was now wedded to the politics of the state, had significant consequences for the development trajectory of Maharashtra. Lele (1990), commenting on the regional politics concerning water, argues that "it was generally recognised […] that in the areas of irrigation, roads and primary education, the regions of Vidarbha and Marathwada were significantly lagging behind the rest of Maharashtra" (Lele, 1990: 177). The figure below provides a glimpse of this differentiated development in terms of percentage of irrigated area across the four regions of the state.

[67] The rise of cooperatives signifies the rise of a particular class of rural elite in opposition to the urban elite, which drove and dominated the early years of Indian independence. Several scholars argue that the nature of the Indian State and democracy changed substantially with rise of this intermediate caste-class coalition which Rudolph and Rudolph call 'the bullock capitalists' since their source of power was the rural agrarian economy (1987). Bardhan calls them the intermediate caste (1998) and Attwood refers to them the capitalist peasantry (1985). The case of Maharashtra could be read in parallel with similar mobilisation in other parts of India, such as the Kamats and Reddys in Andhra Pradesh and the Jats in Haryana and Western Uttar Pradesh. These were intermediate caste groups with a powerful rural base that emerged as a by-product of the success of the Green Revolution from the late 1960s onwards.

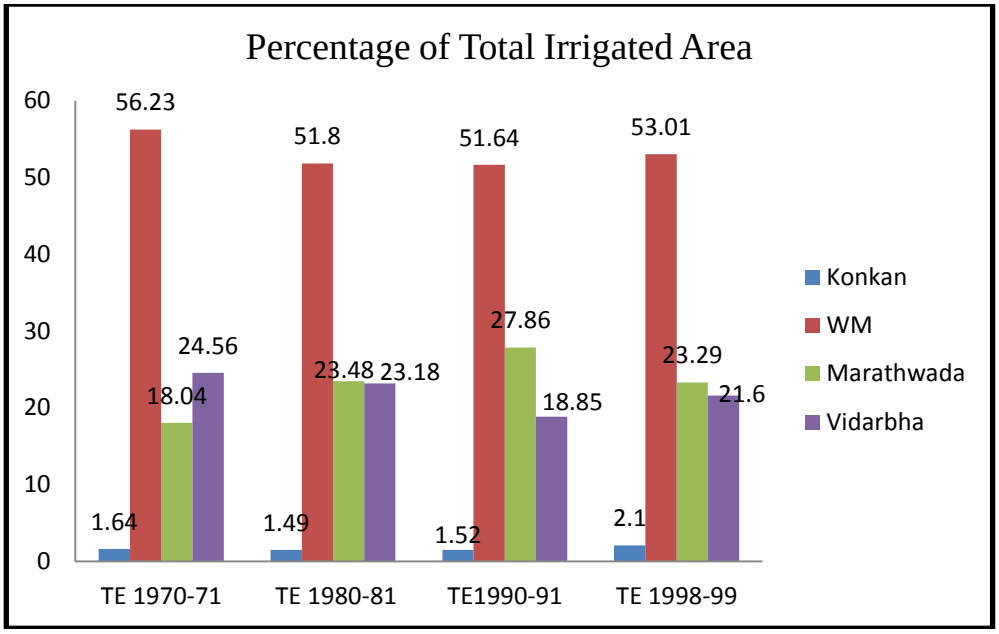

Figure 5.2: Percentage of the total area irrigated in Maharashtra
[Adapted from Mohanty (2009) (TE=Triennium ending; WM= Western Maharashtra)]

Sugarcane cultivation and cooperatives played a significant role in steering the irrigation development and the politics of the state. At particular moments in history the state interests were aligned with expansion of sugarcane cultivation: in colonial times it was aligned with revenue and extractive capacities; since independence the interests of cooperatives have, over the years, been aligned with the stabilisation of political interests (Rosenthal, 1974).

Sugarcane cultivation, control over the cooperatives and the extension of irrigation networks are also serious areas of contention in Ahmadnagar (DeSouza, 2010). The observations made in the previous paragraphs also resonate with the politics in the Jahot system (which covers the *talukas* of Shrigonda and Karjat). There are at least five major sugar factories in Shrigonda and Karjat, and the ownership of these factories also played a central part in manoeuvring the water flows. Sugarcane cultivation and canal irrigation have significantly contributed to the agricultural development of this area. The majority of people associate the development of Shrigonda with the Jahot canal system (Interviews January, 2012). The farmers often approach local politicians and petition them to release water for irrigation. In fact, the farmers in the Karjat *taluka*, which forms the tail of the canal system, were certain that their water fortunes would change because the deputy Chief Minister of the state took over the sugar factory located in Karjat. There is another significant area where the cooperative system and the

irrigation canal become intertwined in the Jahot system: water charges are collected directly from the sugar factories, as they maintain the accounts for the farmers.

However, over time, the cooperative movement has declined as many of these cooperatively owned sugar factories are now closing down due to recurring losses, or are being privatised. Cooperatives formed an important pivot for the discussions on the WUA Act and entitlements. I explain the implications of this in the next chapters.

Figure 5.3: The sugarcane economy
Tractors laden with sugarcane outside the Viladri sugar cooperative factory, Shrigonda (February 2012)

In this section, I demonstrated how *shejpali* as a system of water delivery provides greater leverage to the Department. Simultaneously, I also highlighted how the sugar cooperatives are interlinked with the irrigation networks and the development fortunes of the state. These two developments need to be historically located in the congruence of factors that emerged at the intersection of contradictory goals of revenue, self-sufficiency, political imperatives and also the peculiarities of geographical features of Western Maharashtra. However, sugarcane cooperatives and irrigation extensification did not bear fruit for all. While they created opportunity structures for some, they also resulted in marginalisation of farmers who lacked the leverage and constituency to

participate in these gains. This led to movements for water rights and equity in the state, which is the focus of next section.

5.2.3 The Discourse of Rights and Equity

Similar to the fall-outs observed during the colonial period, pockets of prosperity boomed alongside the inequities of the canal system. In Maharashtra, there were two kinds of inequities: regional and canal level, which concentrated developments in specific parts of the state and in the head reaches of the canal system respectively. In the literature on canal irrigation, this head-tail inequity has been the focus of several works in the Indian context (Wade and Chambers, 1980; Ramamurthy, 1995; Mollinga, 2003; Narain, 2003). In the context of Maharashtra, this critique is further laced with lop-sided effects of sugarcane cultivation and the politicisation of the cooperatives, which created "small islands of prosperity" (Sathe, 1986: 737). In the light of this uneven spread of 'big development', there were initiatives which emerged and local solutions to problems of inequity created through the canal system or sustained periods of drought. In this section, I focus on two significant initiatives: *pani panchayats* (water councils) and Participatory Irrigation Management (PIM). These have, in current times, provided discursive hooks and tropes for discussion on regulation and entitlements.

Water rights and the pani panchayats

In 1971-72, Maharashtra suffered a massive drought. Several old villagers in Jahot (esp. in the head reaches) recalled this *bheeshan dushkaal* (intense period of drought) and described the Jahot system as a blessing to the village. The birth of *pani panchayats* needs to be located as a mitigation measure during this drought. The brainchild of an engineer, Vilasrao Salunkhe[68], the *pani panchayat* model is based on five principles of sustainable and equitable management of water: first, water is granted on a per capita basis equivalent to that needed for half an acre per person, with a maximum of 2.5 acres per family, to ensure that basic needs of the family can be sufficiently satisfied; second, irrigation is provided for seasonal crops only. Cultivation of water intensive crops such as sugarcane and grapes is not permitted; third, twenty percent of cash contributions are borne by the

[68] Salunkhe set up a trust organisation called the *Gram Gaurav Pratishthan* (Naigon village, Purandhar *taluka*) which provided technical and financial help for setting up lift irrigation schemes for areas not covered under canal irrigation (Sangameswaran, 2009b).

community; and fourth, these principles are held together by the common property resource ethic, whereby water is regarded as an inalienable right of the community.

The most remarkable feature of the *pani panchayat* is that it delinks water and land rights so that water rights are not tied to land ownership. Under this model, the landless are also provided with water rights. However, in practice, the landless component could never be operationalised because of the cost involved in collecting cash contributions, uncertainty about returns to water, and the limited potential for the landless to lease out water since all members had water rights. Moreover, the landless members were a minority that was both numerically and socially weak (Phadke, 2002; Sangameswaran, 2009b)[69].

Over the years, the *pani panchayat* model has emerged as an alternative to the top down system of irrigation management. Its emphasis on social justice and equitable water distribution had a deep influence on the watershed movement in Maharashtra and the protest movements in Southern Maharashtra[70] in terms of equitable distribution of the canal water. The *pani panchayat* model tried to provide a link between livelihoods and water rights by decoupling land and water rights, and linking the protective and productive dimensions of water. It also emerged as a counter to large-scale development sustained by mega-projects and sugarcane cultivation. This thinking is fundamental to a counter paradigm of rethinking entitlements in Maharashtra, especially in the context of reforms, which I discuss in the next chapter.

Participatory processes in irrigation[71] : precursors and patrons

Though PIM is associated with donor-led reforms in several countries, in Maharashtra it is treated as a part of the social fabric of the state. Several water

[69] Also inspired the *Khudawadi* experiment by SOPPECOM in the Osmanabad district, where societies of the landless members were formed. SOPPECOM worked with members, especially women, to stabilise their incomes. The experiment had several positive spin-off effects such as establishment of self-help groups, but did not prove to be sustainable over time (KI11).

[70] For example, the movement for the Baliraja memorial dam on the Yerala river in Sangli district. The movement started in the late 1980s to oppose sand mining from the river-bed. Since these were also drought-affected regions, the local people, under the leadership of 'Mukti Sangharsh' ('struggle for freedom'), constructed a check dam to address the water issues of the region.

[71] I want to distinguish them from the reform-led initiatives of irrigation management transfer. I differentiate between the initiatives led by the State - top down models - and those sporadic but grassroots initiatives started and sustained by certain civil society organisations.

practioners and grassroots activists consider the WUAs to be a home-grown experiment and separate it from the global trend of Irrigation Management Transfer (IMT) (KI07, KI11, KI12, KI14, KI15). Historically, community management of water in Maharashtra can be traced to the *phad*[72] system in Nasik and Dhule, which was the precursor to the block system which Mr. Visvesaraya experimented with on the Nira Canal in the late nineteenth century.

In order to address the sporadic nature of water distribution among farmers, Visvesaraya tried to group sugarcane 'block' cultivators into groups for internal distribution and achieved limited success (Visvesaraya, 1951). Later, this recommendation of establishment of water panchayats, one for every ten miles of canal section, also formed part of the Bombay Enquiry Committee, 1938 (Narain, 2003; Narayanamoorthy and Deshpande, 2005). In fact, one of the earliest initiatives to form water cooperatives took place on the Godavari canals in 1937, namely the Big Bagaitdar Society at Samavatsar village in Ahmadnagar district (Patil and Lele, 1994). Though the PIM initiative has an endogenous element in the case of Maharashtra, the major initiatives to remedy the canal system that have emerged in Maharashtra from 1980s onwards are also aligned to the global trend of irrigation reform (Mollinga and Bolding, 2004). Two experiments on WUAs, initiated during the late 1980s and early 1990s, have had a substantial impact on these developments. I discuss these below.

As I mentioned in the previous chapter, irrigation is managed at state level in India, but the central government has, from time to time, provided the operating framework for redressing inefficiencies in the sector. For example, the CAD programme was heavily financed by the central government (Chapter 4). In 1985, a circular from the Ministry of Water Resources, aligned with the global trend in irrigation reform, recommended the formation of user groups for distribution below the minor and sought the active collaboration of NGOs[73]. Enthused by this offer, the Centre for Applied Systems and Development (CASAD), a civil society organisation, led a pilot action research programme at the Mula dam, a major irrigation project in the Ahmadnagar district. This initiative (henceforth the

[72] Refers to the system of building check dams on rivers from which canals spread out into the field. The system was prevalent in the Northern districts of Maharashtra. These systems are managed and operated by the beneficiaries themselves (Joy and Kulkarni, 2010).
[73] Reiterated in the National Water Policy, 1987.

Chanda experiment) involved the creation of user societies, supplying water on a volumetric basis to promote the economic use of water. The initial results received positive feedback in terms of an assured supply of water and improvement in crop yields, but as Lele and Patil (CASAD) note, there were substantial bottlenecks, especially regarding water use efficiency, and therefore the Chanda experiment only attained the "first stage of the learning process" (Patil and Lele, 1994: 4)

Taking lessons from the positive story of the Chanda experiment, Mr Bapurao Upadhye and his colleague, Bharat Kaware, tried to replicate this idea of user association on the Waghad dam in Nasik district in the early 1990s. These two founded the Samaj Parivartan Kendra (SPK), an NGO in Nasik working to support rural livelihoods. The deprivation within the tail system led to the formation of three user organisations in Ozar village[74]. The Ozar experiment was the product of galvanisation provided by civil society organisations such as the SPK and technical help from SOPPECOM and the Water and Land Management Institute (Keremane and McKay, 2006; Paranjpe et al., n.d.). These organisations provided the requisite base for negotiations with the bureaucracy on one hand and farmers on the other (KI15). By getting water to the hitherto 'unreached portions' of the system, the Ozar experiment led to the spread of user associations to other parts of the Waghad canal system. Waghad is a successful example of federation-level user organisation, where the entire canal system is handed over to the Project Level Association (PLA).

Today, the Waghad case enjoys an iconic status in the history of PIM in Maharashtra[75], and the Department organises visits from different parts of the state to get the farmers/ WUA committee members to understand the dynamics of successful 'participation', largely defined as full cost recovery. The deputy engineer who accompanied me during the visit defined Waghad as the "ideal project" (KI31). I spent three days at the Waghad site, meeting members of Ozar WUAs, PLAs, Bharat Kaware and Department officials. It was interesting to see how farmers, SPK and the Department had different scales to weigh its success.

[74] WUAs: *Jay Yogeshwar, Mahatma Phule and Banganga.*
[75] Though the story of Waghad started as a grass-roots movement, it has become a mobilising metaphor for WUA formation since 2005.

In this story, lesser known are the struggles and underlying tensions of WUA formation; the conjunctive use of water and grape farming, which has boosted the agricultural economy of this region (based on interviews and observation, December 2012- July 2012). In subsequent interviews, several respondents referred to Waghad as an atypical example that would be hard to replicate at other sites, which by their standards were raw and average (Field Journal, January 2012).

From 1992 onwards, the government of Maharashtra has tried to replicate the PIM model elsewhere, with limited and location-specific success. But this enterprise is beset with obstacles such as the formation of user groups above the minor level (Narayanamoorthy and Deshpande, 2005). Others, such as Bharat Kawale and Sudha *tai* (from SPK), whom I met during the mobilisation workshops for the WUAs in Ahmadnagar, declared that these should be need based strategies. This limited success has, however, not deterred the government from experimenting and expanding PIM. Until 2005, these WUAs were formed under the Cooperative Societies Act, but now come under the water-specific 2005 Act, the MMISFA. This Act is not a significant departure from the erstwhile practice of PIM, apart from the question of entitlements (Chapter 6).

Bolding et al. (1995) argue that IMT-led reforms may provide a space for reconsidering issues of accountability in irrigation management, i.e. reconsidering the state-citizen relationship in the water sector. However, altering these relationships may also imply a change in the nature of the government. Government regulation and deregulation may be signals of power transferring from one sphere to another. This is evident from the following statement made by an Executive Engineer in Maharashtra, who lauded the current efforts of user formation and was certain that this was the only way forward: "The State is unable to reach every individual farmer as it has limited capacity to do so, therefore the WUAs would be the means to extend this control" (KI40).

The PIM experiment in Maharashtra is a convergence of grassroots innovations and bureaucratic imperatives. While the grassroots imperatives from organisations such as CASAD (and later SOPPECOM) and *Samaj Parivartan*

Kendra (SPK) have targeted the inequities within the canal system and worked with the tail-end farmers to form user associations (as in the case of Waghad), the bureaucratic imperatives are marked by a clear interest in increasing the efficiency of the system, reducing the "gap between potential created and potential utilised" and reducing state expenditure (various interviews between December 2011- July 2012).

In sum, the idea of farmers' participation in water management is now part of the historical and social fabric of the state. It is for this reason that both the bureaucracy and civil society actors tend to support these WUA-based reforms, through opposing discourses of efficiency and equity (Chapter 6). In contrast, the MWRRA Act faces strong opposition, for reasons that I discuss in the next chapter.

5.3 Conclusion: change and continuities

This chapter highlighted the contested development trajectory of the state, which was fractured along regional lines. It is against this lop-sided development that I have historically located the genesis of irrigation practices in Western Maharashtra, which have accentuated and amplified these divisions. In this chapter, I have focused on four distinct interventions which shaped the extension of irrigation in Western Maharashtra: the ideas of protective irrigation; the *shejpali* system of water management; the sugarcane cooperatives punctuated with innovations as the *pani panchayats*, and Participatory Irrigation Management. These have subsequently influenced policy processes in Maharashtra.

These four interventions underlined the distinct rationalities of improvement, which in principle had as their target the benefit of the subject population, through raising agricultural productivity. This was achieved by developing the irrigation frontier in both colonial and postcolonial times, interspersed with grassroots initiatives from the 1970s onwards. This chapter demonstrated that what started as palliative or protectionist measures during colonial times subsequently transmuted, with the introduction and expansion of sugarcane cultivation, into a remunerative enterprise. The extensive deliberations of the IIC

(1901-1903) on the nature of irrigation works in the Deccan trap area highlight several issues. The Commission's concern to improve the conditions of "men and things" was guided by two distinct rationalities – to generate revenue and to secure the colonial rule. These disparate goals were successfully maintained through extending networks and providing protective tariffs to sugar industry in the 20th century. The large-scale engineering works also became the manifestation of State power, or what Scott calls the 'high modern' (Scott, 1998). This also laid the basis of the high and low water cultures, whereby irrigation became a domain of hydraulic experts. Most of the problems which the IIC and subsequent Commissions[76] have highlighted continue to be the fundamental focus of the reformist discourse, and it does make one wonder whether reforms do in fact bring anything new to the table.

The decades following independence, which focused on extension of irrigation, led to a distinct political constellation through the rise of the water cooperatives. These have had significant ramifications for the development trajectory of Western Maharashtra and also of the state. Moreover, the expansion and penetration of bureaucracy through the *shejpali* system reinforced a more interventionist role for the State. This is precisely the target of regulation through reforms. Key ideas from the *pani panchayat* model and the PIM initiative(s) also significantly influence the current policy processes, for they provided different idioms of equity and participation in the water discourse of the state.

Therefore the current discourse and practice of regulation is a *bricolage* of old and new practices (Cleaver, 2012). These have, over a period of time, played a significant role in determining the support for reforms. Though reform-led regulation challenges these very practices of the past, they have also become 'tropes' (Throgmorton, 1993) for several actors to sustain, legitimise and challenge the reformist regime, either through user participation and cooperatives or water rights (Chapter 4 and 6). In the next chapter, I analyse how these key ideas and practices, which developed over time, influence the current discourse(s) of regulation in Maharashtra.

[76]Bombay Inquiry Committee 1938, Irrigation Commission 1962, Sukthankar Committee, Barve Commission and several others (see Joy and Kulkarni, 2010).

6. "The Will to Improve"[77]: Reforming the Water Sector in Maharashtra

> Maharashtra is not an irrigation state: it has the lowest irrigation potential among the [Indian] states. It is an industrial and a rapidly urbanising state. There will be a lot of demand for water from the industry and the growing urban centres. Now irrigation will have to do some sacrifices. We have to live with this situation. Given the small role of irrigation in Maharashtra, we have to think whether a regulator is required specifically for the irrigation sector? Irrigation may be huge in terms of volume of water, but in terms of significance, I think it is third in priority.
>
> Member, MWRRA (June, 2012)

Introduction

Until April 2011, Maharashtra was the only state in the country to have accorded higher priority to industrial uses of water than agricultural uses. Though the events of 2011, as this chapter will show, have reversed this priority, the clamour of water scarcity in the face of urbanisation and industrialisation remains unabated. The previous chapter demonstrated that 'improvement' was at the heart of water resource development in Maharshtra. This was sustained on diverse ambitions in colonial and postcolonial times. In this chapter, I locate the current wave of reforms in this very logic of improvement whereby diverse - and at times contradictory - rationales are provided to initiate and sustain this reform process.

In Chapter 4, I demonstrated how it is the economic framing of regulation, defined in the language of tariffs, licenses and private sector participation, which is becoming mainstreamed in water policy discourses at the national level (Chapter 4). This chapter shows how these key concepts of regulation are translated in the corridors of the state government. It highlights the triad of narratives, actors and politics which constitute Maharashtra's water sector, and opens up the "policy worlds" (Shore et al., 2011) of Maharashtra, in which actors and agents compete for influence and 'make' regulation.

This chapter shows how regulation through reforms is conceptualised (sections 6.1 and 6.2) and contested (section 6.3) in the state. I argue that the MWRRA faces a legitimacy crisis in the state as various actors resist, oppose or challenge its mandate. This is further reinforced through the discursive politics over entitlements (section 6.4 and 6.5), which reshapes the regulatory space in

[77] Li (2007).

Maharashtra. Through these various contestations, I locate the agency of the State in framing and reshaping the agenda of water regulation, thereby asserting and maintaining its control (section 6.6).

6.1 On the Path of 'Improvement': the narrative of reforms and regulation (2000-2005)

From 2005 onwards, under the World Bank-aided Maharashtra Water Sector Improvement Project (MWSIP), Maharashtra set itself on the determined path of reforms. It legislated in two separate Acts: Maharashtra Water Resources Regulatory Authority Act (MWRRAA, 2005) and Maharashtra Management of Irrigation Systems by Farmers Act (MMISFA, 2005). These two acts constitute the regulatory framework in the state. Not only were these Acts aligned to the aims of the national and the state water policies of institutional restructuring, but they also introduced the new vocabulary of the independent water regulator and the concept of entitlements into the water discourse of the state and the country.

Though the MWSIP was formally inaugurated in June 2005, the negotiations for reforms between the senior officials in the state government, chiefly the Water Resources Department (henceforth the Department), began in 2001 and culminated in a reform package of 325 million US dollars being given to Maharashtra (World Bank, 2005). During this period, Maharashtra also launched its State Water Policy (SWP), which was developed with inputs from the Bank (KI20). Besides offering technical advice for the SWP, the Bank also had substantial influence in drafting the reform legislations: the MMISFA and the MWRRAA. The extent and degree of the Bank's influence over the legislations has been variously described as considerable pressure by some officials, who agreed that the Acts were designed in consultation with the Bank (KI20, KI23, KI23), and as made behind the door by other observers of the reform process (KI07, KI08).

Thus, for some senior officials it was the financial help, for some it was the technical expertise, while for others senior bureaucrats it was the muscle flexing by the Bank that led to these changes. These senior officials, who were either part of the dialogues with the Bank or participated in the Cabinet-level discussions during the legislation, agreed that the Bank was able to push through agendas

which, in normal circumstances, the bureaucracy would find difficult to get through the Cabinet (KI22). This also shows how bureaucrats view donor-driven programmes as circumventing political opposition. A senior bureaucrat serving at the *Mantralaya* (Secretariat, Maharashtra) during these negotiations characterised the role of the Bank in this manner:

> It is an outside agency which propels you to make change […] and they [the Department] went to the World Bank. However the Bank said that we will help you but you must carry out these reforms. The Bank is normally interested in carrying out reforms and distributing money on the basis of conditionalities and many a time these conditionalities are watered down. But in Maharashtra, people are more enlightened and ready to work for change (KI23).

In Chapter 4, I described how certain changes within the lending policy of the Bank have made the states the focus of reform in the last two decades. However, the introduction of reforms in Maharashtra was also sedimented by a positive context. This has provided the institutional and ideational alignment for rolling out this process, which is the focus of the next section.

6.1.1 The roadmap to reforms

Between 2001 and 2005, the proposal for radical restructuring was underway in Maharashtra. The state also faced elections while the reform Bills was being discussed in the legislature. This delayed the passing of the Acts to some degree. But there were certain factors that provided continuity to this project of reforms. The most significant among these was the presence of Mr. Suresh V. Sodal, who headed the Water Resources Department as its Secretary and later became the Secretary of the MWRRA. A civil engineer by training and the Department's man, Mr. Sodal's continued presence during the formative years of reforms provided the required push for this legislation. In several of my interviews, he was described as the "man behind the reforms", and this attribution resonated with the field level bureaucrats as much as it resonated at the top level of policy making.

Mr. Sodal brought with him two key advantages for moving forward the water reform project. One, as the Secretary of the Department and later of the MWRRA (upon its formation in 2005), he provided bureaucratic continuity to the agenda of the reforms. His close influence on and institutional proximity to the Department provided some degree of legitimacy to the reforms. His credibility and

employment record at the Department also made for a cordial relationship between the MWRRA and the Department. In fact, as I show later in this chapter, the MWRRA office became a microcosm of the Department itself. Furthermore, given his experience of the water sector and his record of service within the sector, he was well regarded by all for his "missionary zeal" (KI06) for reforms, even among sections of civil society.

Mr. Sodal started the negotiations with the Bank when he was the Secretary of the Department and ensured that these Acts were passed. His 'good relations' with the Irrigation Minister, Mr. Ajit Pawar, and his influence within and outside the Department were highly instrumental in mainstreaming this reformist project in the water sector in Maharashtra (KI22).

This interlocking was further enhanced with the presence of Mr.Kale, also a technocrat, who had initially served with the Central government, New Delhi and now led the project for Maharashtra from the World Bank's side. He explained that since he was familiar with the water scenario and institutional landscape of Maharashtra, the Bank was able to provide technical guidance and assistance in this restructuring project (KI02). These key officials acted as pivots to reforms, and their actions highlight a clear pattern of circulation of ideas and momentum through the levels of policy making.

Mr. Kale listed three main ingredients for the reforms in Maharashtra. One, Maharashtra provided a suitable ground for these reforms as it had started to restructure its water sector even before 2000. Two, the 'vision' of the bureaucrats who could capture the idea of reforms, and three, their capacity to push it forward. While independent regulation and entitlements are new concepts in the state's vocabulary, certain other ideas within the MWSIP, especially those related to farmers' participation, are historically embedded in water sector of Maharashtra (see Chapter 5). Some department officials were also reticent about giving the Bank 'credit' for these reforms. They argued that Maharashtra was also following certain 'good practices' regarding accountability and transparency even before the reforms were introduced in 2005; the irrigation reports were published since the 1980s, though the documents were not made public until 2005. The state also initiated a process of benchmarking of projects in 2001 (KI02, KI26). This

willingness to move towards reforms and the presence of a 'positive context' - and most essentially the continuity provided at the top level of policy making - provide the framework for the introduction of reforms into the state.

However, the Bank did require political commitment to these reforms to ensure the durability and sustainability of the project. (KI02). This political commitment is also congruent with Bank's sector-wide strategy of restructuring, as explained in Chapter 4. In his interview, Mr. Kale agreed that the Bank had 'pressured' the Government of Maharashtra (GoM) to legislate for the MWRRAA and MMISFAA. He explained that the Bank imposed these conditions to ensure that "there is no going backwards on the law and the legislations will provide a legal backing to the reforms and that these were necessary conditions to avail the loan" (KI02).

The Bank took its legal commitment extremely seriously and it is only when Maharashtra had brought these Acts into force that the MWSIP loan agreement was signed, between the Bank and the Government of Maharashtra. The introduction of the Acts and the MWSIP followed a clear chronology of events which made these legislations a mere curtain-raiser to the reform process that were about to unfold in Maharashtra from 2005 onwards. MWRRAA was published in the official Gazette on 4 May 2005, followed by the MMISFA on 19 May 2005. The GoM entered into the agreement with the Bank on 26 May 2005 (Thakkar, 2007). Cullet (2012), writing on donor led programmes, argues that such legislation (as MWRRAA) brought under pressure from development agencies undercuts the democratic process and are thus reduced to a rubber stamping exercise. This backdoor entry (Dubash, 2013) also meant a transfer of the Bank's water managerialism and its corresponding narratives to strengthen the reformist discourse in Maharashtra.

6.2 Recipe for Reform

As argued in Chapter 4, the World Bank, in its country-specific documents, highlights the issues of scarcity and inefficiency that are pushing India towards its "turbulent future"(Briscoe and Malik, 2006). Likewise, the Project Appraisal Document (PAD) portrays the Maharashtra water sector as straining under water scarcity and intersectoral competition of water where irrigation is at the core of

reform; irrigation uses 80 percent of the state's water resources (Government of Maharashtra, 2005c; World Bank, 2005). The report states that the water sector in Maharashtra:

> is faced with critical challenges. First, competition among different sectors has increased dramatically; giving rise to disputes and conflicts […] the long term efficient and equitable intra and inter-sectoral management of the state's water resources will become more critical. Second, poor quality irrigation service is undermining the performance of irrigated agriculture. Third, the limited cost recovery in the irrigation sector […] has added to the financial burden of the state. Fourth, planning and management of water resources in the state are fragmented and uncoordinated (World Bank, 2005: 1).

As I met more and more officials in Mumbai over a period of eight months, this rationale for reforms was reiterated as an article of faith. They highlighted several problems in the water sector: low efficiency of water use in irrigation; overexploitation of groundwater; poor water delivery systems; high incidence of water pollution; inability to recover the costs of operation and maintenance (O&M); and intersectoral conflicts, especially within the context of increased urbanisation and industrialisation in the state (KI02, KI20, KI21, KI23, KI28). It is these issues that have come to characterise the "unregulated" nature of the water sector in Maharashtra (KI21). The water woes of Maharashtra were thus articulated as problems of demand and supply, or problems of irrigation potential created and irrigation potential utilised. In a newspaper interview, Mr. Sodal said: "All the water in the state is fully harnessed. All that we can do now is to improve the efficiency with which we use water" (Sodal quoted in Rajshekhar, 2006).

Amidst these crisis portrayals, I was yet to understand the need for 'independent regulation' in Maharashtra. In my initial interviews, the desire for regulation was always articulated in a list of "ills in the water sector", and regulation was felt to be absolutely fundamental to setting things right. Stirling (2005: 225) argues that framing policy is not simply limited to the choice of policy questions but also the setting of agendas and the bounding of institutional remits. Likewise, in Maharashtra these crisis portrayals also meant a particular way of seeing regulation.

Since 'independent regulation' entered the policy world of Maharashtra through a reform project, regulation was increasingly conflated with reforms. It was conceptualised to serve different purposes, address ad hocism in water supply and

delivery, recover cost(s), induce efficiency and provide holistic understanding of water resource planning in the state (KI20). Moreover, the intersectoral conflicts made judicious allocation of water resources by a third party absolutely fundamental to the state (KI22). These framings were not consistent across policy actors as some attributed regulation with improvement of efficiency, some with addressing water conflicts and others with 'improving' the entire water sector itself. As I showed in Chapter 4, regulation made its way into the MWSIP through three different storylines: the narrative of the failing State; the success of models; and the need for water markets. But, in Maharashtra these rationales were becoming more and more obscure. In the next section, I unpack what the contours of this reform-led regulation were, and how it became embedded through: the State Water Policy, the MWRRA Act and the related provisions of the MMISF Act. I analyse how regulation was framed as a policy choice in the water reform discourse in Maharashtra, and how it was contested within and outside the state water apparatus.

6.2.1 Instruments of change

The SWP made a clear commitment to legislate in three Acts in order to restructure and revise the roles of the Department. Two of these Acts were the MWRRAA, which initiated the establishment of an independent water resource regulator, and the MMISFA for decentralisation of irrigation management, which made statutory provision for the constitution of WUAs (Government of Maharashtra, 2005a). Alongside these, the SWP also mentioned a separate Act for the constitution of River Basin Agencies (RBAs) to convert Irrigation Corporations into water services agencies[78].

These Acts indicated the formula for institutional restructuring, i.e. to move away from a 'command and control' style of operation to market-based water management and thus were the harbinger of the new regulatory framework in the water sector of the state. Endorsing this shift, Mr. Sodal mentioned in his

[78] The Constitution of RBAs was one of the key points of institutional restructuring in the state. Five RBAs were planned for the five river basins in Maharashtra (Krishna, Godavari, Vidarbha, Tapi and Konkan). The Irrigation Development Corporations for these five regions were to be restructured and reconstituted as RBAs (Government of Maharashtra, 2005c). These RBAs were a significant institutional mechanism for the implementation of reforms and entitlements. However, this Act had still not been passed until the completion of my fieldwork in October 2012. The water resources department and its machinery continued to perform the functions of the RBA, and implemented the entitlements in the field.

interview with the media that "as per the new policy, the state government is seeking to move out of its managerial role in these irrigation projects by effectively handing them over to agriculturists' bodies" (The Business Standard, 2004).

Though the SWP mainstreamed the key principles of National Water Policy, it digressed from it in one fundamental way. In listing the water allocation priorities, the SWP gave priority to industry over irrigation and thus highlighted the development priorities of Maharashtra. In addition to this, it reaffirmed its faith in private sector participation. Introducing the vocabulary of independent regulation and entitlements, the SWP defined them as stable use rights issued by the State. It noted:

> [...] the state recognizes that there is considerable economic and social value in water user entities and service providers having a stable bulk entitlement to water. The State shall establish well defined, transparent system for water entitlements that cannot be unilaterally changed by any state, agency or authority (Government of Maharashtra, 2003: 10).

The SWP defined entitlements but did not state clearly their implications. It did not expand on and define these rights and entitlements (Joy and Kulkarni, 2010). However the succeeding clause on the transfer of entitlements "between entitlement holders in any category of water uses" (Government of Maharashtra, 2003: 10) pointed towards the intersectoral trading of entitlements. This was also dovetailed with an argument for compensation for such water expropriation (Government of Maharashtra, 2003). The changes in allocation priorities, and the introduction of entitlements that might be amenable for trading, and the clause on private sector participation - in sum the 'market oriented reforms' - opened the gates to heated contestation around entitlements, which will be explained later in this chapter.

The entitlements were spelt out in the succeeding Acts. The MMISFA and the MWRRAA had overlapping responsibilities for managing the entitlements[79]. In order to "facilitate and ensure judicious, equitable and sustainable management and allocation of water resources"(Government of Maharashtra, 2005b: 434), the

[79] The provisions of entitlement distribution in the MMISFA are to be read alongside Sections 11 to 14 and section 22 of the MWRRA Act (Government of Maharashtra, 2005a) which deal with criteria for entitlements and redressal of grievances.

MWRRA is required to set entitlements for various categories of uses (drinking, irrigation and industry) and the equitable distribution of entitlements within each category, and also to fix tariff rates for use of water for agriculture, industry and drinking water (ibid)[80].

The MWRRAA defined "entitlement" as an authorisation by any RBA to use water for the purposes of the Act (Government of Maharashtra, 2005b). They are "deemed to be use rights, which may be transferred, bartered, bought or sold on an annual or seasonal basis, within a market system and as regulated and controlled by the Authority" (Section 11 (i) (i), Government of Maharashtra, 2005b). Determined on a volumetric basis and subject to review every three years, they deal with surface and sub-surface irrigation[81].

The onus of equitable and judicious allocation rested on this new but important idea of entitlements. The MWRRAA, however, turned out to be a very irrigation centric Act, in script and in practice. It is mainly concerned with bulk uses entitlements and tariffs on water i.e. water from the reservoir. It does not cover retail distribution or water supply systems i.e. drinking water. For industries, water is either delivered to the individual industries, which directly lift water from the dam, or delivered via the Maharashtra Industrial Development Corporation (MIDC). However, the regulations for agricultural uses of water are far more detailed and explicit. A senior bureaucrat, who also served as the Chairperson of the MWRRA, noted the irrigation bias but argued:

> The Act is definitely more irrigation printed but at the same time there is a realisation that you need to view water as a resource, which is not confined to irrigation and you need to look at the subject holistically rather than sector wise. And the MWRRA would do it. But, when we held public consultation from all the sectors, in practice they were all dominated by the irrigation sector (KI23).

Though there was this underlying idea of resource perspective and inter-sectoral coordination, the MWRRAA was initiated by the water resources department.

[80] While tariffs and entitlements are two key regulatory tools, the 2005 Act also entrusts the Regulator with certain other functions. These include: 1) administration and management of inter-state water resources and apportionment for river systems of the state, 2) review and clearance of water resource projects with special emphasis on removal of backlogs in the Vidarbha region as per the Governor's directive (Government of Maharashtra, 2005b).

[81] The Department officials and the MWRRA were swift to realise this gap between flow irrigation and groundwater, and efforts are being made to amend the MWRRAA to include groundwater. During my fieldwork (2011-2012), several officials told me that the Bill was awaiting the assent of the Governor (KI20, KI26).

This also resulted in the MWRRAA becoming more irrigation centric Another MWRRA official argued that since a higher proportion of water goes to agricultural uses, it is here that efficiency must be attained. He categorically stated that industrial uses of water are already 'efficient' in terms of cost recovery, but it is the agricultural uses which are responsible for the irrigation sector being "loss-making" (KI21). This also reflects the power of a particular world view in which irrigation, as a loss-making sector using 80 percent of the water resources of a water-starved state, needed to be 'disciplined' through cost recovery and allocation mechanisms such as entitlements. This narrative is also apparent in the emphasis on full cost pricing of water (see Chapter 4).

All this means a larger role for the MWRRA in the irrigation sector. It is required to set the quota at the sub-basin/project level for equitable distribution of water in the command area of the project, on the basis of the land in the command area, with the caveat that during period(s) of scarcity each landholder would be given water to irrigate at least one acre of land. Also, in order to address tail-ender deprivation in the canal system, the Act also provides for tail to head water rotation. A local regulator, one per irrigation project, was to be appointed and he was to be the representative of the MWRRA. It is the regulator's duty to ensure that the entitlements were delivered as per the Act (Government of Maharashtra, 2005b; MWRRA, 2007). This also provisions of the MMISFA and the MWRRAA closer.

The MMISFA (2005) dealt with the operationalisation of the entitlements to the WUAs. By making WUAs mandatory vehicles for receiving entitlements, the Act ensured that all irrigation projects would be decentralised to enable irrigation management transfer (Government of Maharashtra, 2005a)[82]. However it restricted this compulsory participation to landholders in the command area of the project. It stated:

> All the landholders and occupiers in delineated land of a Water Users' Association at Minor Level shall be deemed to be the members of Water User Associations at Minor Level (Section 8 (2), Government of Maharashtra, 2005a).

[82] However, to start with, 226 projects undertaken under the MWSIP were commissioned for the MMISFA experiment. The WUAs formed under the old Cooperative Act were also transferred to the new legislation to be covered under the MMISFA. This experiment was to be upscaled to the entire state within six years (KI20).

The entitlements are explained through three particular themes: volumetric measurement of water; freedom of cropping; and fixing of responsibilities for service delivery and distribution of water. Entitlements are described as "bulk water use entitlements or individual water use entitlements as determined by the Appropriate Authority from time to time" (Government of Maharashtra, 2005a: 483). They are allocated to the WUAs concerned in terms of volume of water, which is calculated and measured at the point of supply. The Act notes that entitlements would ensure freedom of cropping since farmers would have prior knowledge of the volume of water to be received. While the Department retained responsibility for delivering water to the WUAs, the WUAs were responsible for delivering the water to the farmers as per their individual entitlements (Government of Maharashtra, 2005a). However, the Act did not specify how these individual entitlements were to be measured and supplied.

However, the regulatory framework put forth in these Acts, MWRRAA and the MMISFA, glossed over questions of equity in distribution. The Chairperson of the MWRRA stated that "our responsibility stops at the outlet level and unfortunately we do not have any authority to regulate the internal distribution" (KI22). The MMISFA made elaborate provisions for various types of entitlements, which in effect defined the relationship between the Department and the WUAs. The Department officials maintained that once the WUA received water as per their entitlement, they would be able to distribute water among themselves, and efficiency would guarantee equity. This emphasis also reinforced the principle of cost recovery and standardisation of service rather than equitable distribution of water. By keeping retail distribution out of its mandate, distributional equity amongst users was kept out of the purview of regulation. Likewise, the Act focused on bulk water entitlements and not individual entitlements[83]. Entitlements therefore became guarantees from the WRD to the WUAs of the supply of water from the department[84], but would not necessarily translate into guarantees of water to individual farmers. In Chapters 7 and 8, I

[83] The MWRRAA mentions individual entitlements with reference to groundwater but as Chapters 7 and 8 will show entitlements were only calculated on canal water.

[84] The MWRRAA discusses at length the distribution and criteria for entitlement distribution in irrigation i.e from WRD to WUAs. It has specific provisions for appointment of regulator and dispute resolution officers, who can be approached for breach of entitlements. This will become clear in Section 3 of this chapter which unpacks the concept of entitlements.

analyse how this framing interacted with the power ridden realities of the localized project.

A close analysis of the SWP and the corresponding Acts highlights the nature of the reformist discourse that emerged up to 2005. The narrative of inefficiency associated with the loss-making irrigation sector, coupled with inter-sectoral conflicts, led to the creation of the image of a water stressed sector. The SWP and the Acts provided 'technical' recipes for addressing this water stress. It rationalised a specific, problem-solving approach as independent regulation became an answer to corruption and clientelism, where the entitlements as guarantees are defined and designed to ensure standards of water delivery rather than to ensure equitable distribution. Divergent views emerged as regulation was conceptualised in the water sector. It served three functions: it was a third party, which needed to curtail the powers of the Department; it was a vehicle to stem inefficiency in the water sector by standardising service with a definite emphasis on irrigation; and that the Regulator would build a resource perspective in the water sector.

So far, I have presented the 'official' view of regulation and reforms. These Acts also generated a momentum of civil society participation. The particular development trajectories of the water sector in Maharashtra through PIM and *pani panchayats* have provided civil society with an authoritative voice in water discourses of the state (see Chapter 5). Though there are disputes over the nature of participation and how far their suggestions are factored into the policy processes, they have formed a strong bulwark against the Department.

The civil society in Maharashtra comprise a wide ranging set of actors who do not necessarily have uniform positions on water issues, which are most often shaped by their area of work. For instance, Prayas, a Pune-based organisation led by Prof. Wagle from TISS bases its work on water regulation on the experiences gained in the electricity regulation sector. Led by engineers turned social scientists, Prayas has also organised several round-table consultations across the country to galvanise thinking on the rise of Independent Regulatory Agencies (IRAs) (also see Chapter 4) SOPPECOM is well respected for its ground-breaking work on grassroots initiatives in the water sector. It has been at the

forefront of the participatory irrigation management movement in Maharashtra. Gomukh, on the other hand, works in the area of river basin management. These organisations are also joined by several independent activists, academics and political party workers across Maharashtra.

In the implementation of reforms, there are limited avenues for the involvement of NGOs in the water sector reforms, except when they are contracted for specific services, such as building capacity for the farmers involved in these reforms (Chapter 7), or invited to take part in stakeholder/ public consultations. Several of these actors were members of the sub group constituted by the Planning Commission (see Chapter 4). They are invited to tariff consultations and other meetings at the Regulator's office but, as a civil society member, noted "their presence does not mean that their perspective will be incorporated" (KI12).

As far as the regulatory processes are concerned, civil society operates in two/dual capacities. As opposition to official and mainstream processes, they have come together under an umbrella organisation called MANCH, and have sedimented their activism in the state (discussed further in section 6.5.1). They have challenged the insulation and bureaucratisation of the regulatory process and pushed the boundaries of the regulatory space[85]. They have also been contracted as consultants or NGOs for implementing these reforms. For example, these leading organisations such as Prayas, Gomukh and SOPPECOM who have been critical of the reform process have also been working on studies commissioned by the MWRRA or the WRD. This also results in a degree of ambiguity regarding the positions of these leading civil society actors who, on one hand, oppose the government by challenging the regulatory mandate in the state (as I will show below) or propose alternatives to MWRRA (at the national level) but, on the other hand, continue to work alongside the Department/ Regulator and compromise on their critical positions, especially when they act as consultants to these institutions (see Chapters 7 and 8).

[85] Examples include changes such as making tariff papers available in Marathi at the *taluka* level, and making the consultations accessible to the public by pressurising the MWRRA to hold public consultations on tariffs in all revenue divisions, rather than only at the Mumbai office as originally scheduled.

Right from the start, organisations such as Prayas and SOPPECOM were highly critical of the insular process of reform. This also toughened their resistance against reforms, especially the MWRRAA. The next section highlights this contestation. By unpacking the resistance to the MWRRAA in its formative years, it shows how it faced widespread opposition from the start. From here I also begin to draw the contours of the regulatory space as I highlight the contestation around the MWRRA Act.

6.3 The Bias at Birth: Resistance to MWRRAA

Public consultations on the two Acts were organised during their formative years: 2002-2003. Several NGOs regarded the regulator as an alien concept and an imposition from above (KI05, KI11, K114). They linked it to neoliberal understandings of reforms, and the evident ideational, financial and technical role of the Bank made it an object of suspicion in the eyes of civil society actors. By contrast, attitudes towards the MMISFA were more positive and garnered support from several sections of civil society in Maharashtra. In the formative years, MMISFA appeared more home-grown than the regulatory act, which alienated several actors in the state water sector. Various civil society actors and villagers registered strong protests when the MWRRA Act was introduced (Sainath, 2005). Certain clauses of the Act provoked deep resentment. These included provisions on: marginalisation of elected panchayats, imposing high tariffs for farmers with more than two children[86], and making sprinklers mandatory in certain regions (Sainath, 2005). This section looks at the battle of ideas that started in the formative years of the MWRRA Act by highlighting the main axes along which the Act was contested.

6.3.1 MMISFA vs. MWRRA

Historical affinity with the concept of user participation in Maharashtra (see chapter 5) helped garner support for the MMISFA. In contrast to the Cooperative Act, the MMISFA provided an opportunity for a water-specific Act. It also removed the clause of voluntary participation of 51 percent (in the Cooperative

[86] Section 12 (11) states that "Notwithstanding anything contained in this Act, a person having more than two children shall be required to pay one and half times the normal rates of water charges fixed under the clause (d) of Section 11 [clause on tariffs] to get entitlement to water for the purpose of agriculture" (Government of Maharashtra, 2005b: :448). This particular clause was inserted at the Joint Committee deliberations in the State legislature and was the single point of discussion during the legislative debates in the formative years (KI20 and KI21).

Act) and provided for the "automatic" or compulsory participation of all the landholders in the command area. Mr. Bharat Kaware from SPK, the organisation which led the PIM movement at Waghad, also praised the automatic nature of this participation because, according to him, it would prevent the user association being taken over by the elite. However, the Act had certain limitations. SOPPECOM criticised the draft MMISFA for the nature of participation which was tied to land rights, and therefore froze the inequities in land distribution (KI10; KI11). They campaigned instead for the rights of the landless. Despite the criticism, this provision of land-based membership was retained in the final Act[87](KI11). Largely though, the MMISFA met with a favourable reception, and there was no general resistance against the introduction of the Act itself.

An academic and member from Prayas was insistent that it was "misleading" to consider the MMISFA as a product of the reforms because farmers' participation has a legacy in Maharashtra and should be seen as rooted in the history of water management in the state. In his view "MWRRAA is certainly a part of the sectoral reforms but MMISFA started much earlier in the 1990s" (KI07). Similarly Joy and Kulkarni (2010) also confirm that the MMISFA legislation is "not radically different from the existing PIM practice in the state where the WUAs were registered under the Cooperative Act" (2010: 53). In contrast they argue that "the MWRRA Act has the stamp of having been made in haste, to take responsibility of taking hard decisions away from political figures and push it on the administration and to bring it in line with the current thinking of donors like the World Bank" (2010:52).

With regard to the consultations organised for both these Acts, MMISFA had a fairly participatory input in comparison with the MWRRAA. Joy and Kulkarni (2010) recall that the MMISFA was one of the few pieces of legislation that was debated extensively among civil society organisations, as opposed to the MWRRA, which was "done in haste" (ibid:55). Prayas (2010a) also refers to the cosmetic nature of participation in the consultations[88], where comments from members of civil society were rarely taken into consideration. In their analysis of

[87] The civil society activist campaigned for women's representation in the WUAs, which was incorporated in the final Act (KI11).

[88] I tried to access the minutes of the Secretariat Consultations which were organised during the formative years (2003-2005) but these were not available.

the consultation process, Wagle and Warghade (2010: 55) argue that "these consultations were limited to a small number of NGOs and were conducted in an unaccountable manner […] the comments and suggestions given in these consultations were not incorporated in the final bill".

The Department officials confirmed the lopsidedness of this participation, and noted that there was greater participation in the MMISFA than the MWRRAA (K126). This was reasoned out by another seasoned bureaucrat, also involved with the preparation of the MWSIP. He noted that on the institutional side, while the discussions on the MWRRA were generally held with the experts from the World Bank, for MMISFA the discussions were dominated by the Water and Land Management Institute (Aurangabad) and the *Mantralaya* (Secretariat, Mumbai) (KI29). This bias also played out effectively during my interviews with the senior policy makers in Maharashtra, who were eager to take ownership of the MMISFA as 'their reforms' but were less keen to talk about the MWRRA and the resultant changes. The moment I began to speak about the Regulator, my respondents appeared unfamiliar with the subject, but when I broadened the question and asked them about reforms in Maharashtra, they instantly referred to WUAs and the benefits of this reform. MWRRAA already looked like an abandoned project in 2011 (Field Journal, November 2011).

For the Department and the Bank, the MMISFA underlined the shift from a command and control style of water management to the introduction of consumer behaviour and efficiency in water delivery. It revised the relationship between the State and the water users. Civil society members, such as SOPPECOM, saw in the Act the space to articulate issues of equity and justice for the small and marginal farmers, tailenders, the landless and women (KI11). For them, it was an extension of already established PIM principles in Maharashtra. In the case of the MMISFA this ensured a degree of alignment of context and ideas which was missing or limited in the case of the MWRRA.

Since Maharashtra was one of the first states to appoint a water resources regulator, there was not enough local evidence and knowledge about a regulator. The policy makers as well as the civil society organisations often referred to the

international experiences in Mexico, Australia and Chile and attempted to extrapolate the evidence to the Indian context (see Chapter 4). As the World Bank "brought the international wisdom from other countries" (KI26), MWRRAA became more of the Bank's idea. One of the senior bureaucrats remarked on the origin of the MWRRAA as follows:

> The World Bank scheme which came in, the project was designed by the Bank people and there was a space for a regulator, they needed a third party to regulate the supplier and the water user and therefore the concept of the regulator came into Maharashtra (KI22).

In contrast, historical affinity brought MMISFA a general acceptance not just among the civil society actors but also, to a certain degree, among the Department officials. In contrast, the MWRRAA raised "more questions than answers" (Joy and Paranjape, 2009: 244). Echoing some of the concerns raised at the national level (Chapter 4), several civil society groups such as Prayas and SOPPECOM also began to question the need for a regulator in the water sector (KI10, KI12).

6.3.2 Alienation and search for analogies

The Bank's stamp created an environment of scepticism and mistrust, and analogies from the international cases of Chile and Australia, where water entitlements and water markets already existed, became points of reference for resistance to the MWRRA (see Prayas, 2010a). Furthermore, given the lack of local experience of a water regulator, the experience of electricity sector reforms acted as a logical analogy for water sector regulation. This analogy, which formed a part of the Bank's discourse, also translated into the state level and shaped the regulatory debate in different ways. The analogies drawn with electricity sector regulation in Maharashtra raised several questions about the comparability of electricity to water, and also concerns about path dependence in terms of private sector participation.

Path dependence

As argued in chapter 4, several reformist principles were tried out in other public sectors before they were introduced into the water sector. The power sector reforms were a 'positive example' for the reformers in the case of Maharashtra (World Bank, 1998a)[89]. The Maharashtra Electricity Regulatory Commission (MERC) was established in 1999 under a Central Act, later superseded by the

[89] Also interview with KI23.

Electricity Act (EA) of 2003. The presence of the electricity regulator helped in garnering support for the water regulator among the political leaders of the state. One of the senior bureaucrats remarked:

> These ideas were vetted in the 1990s during the liberalisation period; there was a need to have regulations and lift the authority of the government. The model of electricity sector reforms [where the MERC] would set tariffs was accepted by the Minister and the Chief Minister. Yes, we could probably have something good if we have a regulator in water. It [the electricity regulation] was the first Act for a regulator in the state, so the water regulator was modelled on this sector (KI23).

This narrative of path dependence was premised on the idea of mimetic isomorphism. DiMaggio & Powell (1983) argue that goal ambiguity and uncertainty in the environment may also encourage imitation among organisations as they emerge. This leads organisational patterns from one sector to be applied to other sectors in conditions of organisational uncertainty. In the same way, electricity regulation gave legitimacy to the idea of a water regulator among the officials and the politicians, but this support was limited to functions of tariffs and cost returns. Functions that came specifically with a water centric regulator such as the entitlements, state water plan, etc., were missing from the debate in the formative years. One of the senior officials explained this institutional isomorphic trend as follows:

> We had a regulator in the telecom sector, the Telecom Regulatory Authority of India, and then electricity, then they [referring to the discussions in the Cabinet] said that this [water] is the sector which is not giving any returns, people are taking everything for free. Perhaps the regulator will bring some discipline into the sector (KI23).

The official discourse rested on this powerful analogy of applying the ideas of electricity regulation to the water sector. This was further strengthened with the appointment of the first Chairman of the MWRRA, a retired senior bureaucrat who had headed the electricity regulator, MERC. This organisational uncertainty spread to civil society as well. Prayas, a civil society organisation which has worked very closely with electricity regulation in Maharashtra, was at the forefront of resistance to this regulatory intervention. This overlapping also meant a critique of a resource-based sector from the perspective of utility regulation. Comparing the two Acts, Mr. Warghade and Mr. Sathe from Prayas argued that the MWRRAA is weaker than the EA as it lacks certain positive and empowering

features regarding transparency and accountability that are present in the Electricity Act:

> The MWRRAA has emerged because of the World Bank. There may have been some influences from the electricity sector, but if you look at the water regulator, it is weaker than the electricity regulator. Many things that could have been adopted in the water law such as the participation process and reasoned order are not there in the water law. In case of entitlements, there is no provision for participation […] we have this kind of a water regulator because they have not learnt from the experience of the electricity regulator (KI08).

While the experience of electricity regulation provided some degree of legitimacy to the MWRRAA, especially among politicians and senior policy makers, organisations such as Prayas have used a similar logic to critique the same model. They are still pushing for transparency and accountability processes to be adopted by the MWRRA. This overlap has also raised a serious concern about institutionalisation based on two fundamentally different sectors and how far this could be sustained.

Electricity is part of the Concurrent list[90] of the Indian state, while water forms part of the State list. This allows for some degree of state variation and autonomy in water governance. The nature of consumers is also different in these two sectors. Electricity has different kinds of consumers – household, commercial and industrial – whereas water regulation, as per the Act, is limited to bulk consumers such as industry, municipalities and irrigation (KI23). Beyond these organisational variants, the key bone of contention is the difference in the nature of the two resources. Several policy actors, including senior officials, some officials at the MWRRA, and civil society activists, agreed that these two resources differed in nature, constitution and governance. This scepticism questioned the very need for a regulatory model in the water sector in the state. This scepticism was articulated in this way:

> IRA may not be able to handle the water sector, it can handle electricity Water has specific characteristics: permeability of water; under the ground as well as the over the ground, it permeates with administrative and local jurisdictions. Water sources are different; there are geomorphological and topographical differences and water is needed for sustenance for humans and animals. This makes water different from other resources. You cannot have IRAs sitting at the state level and lording over different regimes and different socio-cultural understanding of water (KI07).

[90] Includes subjects in respect of which both the centre and states can legislate over issues.

What emerged through these comparisons was a tussle between the roles of the regulator: between the tariffs and the entitlements. The analogy with the EA was chiefly based on the tariff functions, and this won the approval from the Cabinet. It also simultaneously limited the discussion on other water specific functions of the MWRRA. This had a corresponding effect of prioritising the tariff role, which was more acceptable across the board than its role in terms of entitlements. There were several reasons for this difference in outlook. From the beginning, regulation was associated with pricing and tariff, because of the experience of electricity sector. Moreover, the provisions of tariff consultation did not apply to other provisions as entitlements or the integrated state water plan. Entitlements, on the other hand, were a new regulatory tool, not present in other sectors. Thus they were unique to the water sector. One of the officials explained that the entitlements came into the picture because of the Bank [because of international experiences of] Mexico and Chile (KI21, KI26). This limited knowledge and limited engagement with entitlements became a battleground for the regulatory mandate in the following years.

Back door to privatisation of water

Another downside of the path dependence approach was the argument of privatisation through the backdoor. Independent regulators, as in the case of electricity, heralded a phase of private sector participation in retail distribution. Several civil society actors felt that MWRRAA would be the gateway to private sector participation in the water sector. This fear was further accentuated by the fact that the SWP had clearly stated that private sector participation would be sought in the river basin operations (Government of Maharashtra, 2003). Moreover the MWRRAA explicitly mentioned the possibility of trading water entitlements. These statements created an environment of suspicion in several civil society organisations. Shripad Dharmadhikary, founder of the *Manthan Adhyayan Kendra*, a research organisation dedicated to monitoring and evaluating neoliberal reforms in the energy and water sectors, criticised the MWRRAA as a flawed model for water regulation (2007). For Dharmadhikary, a staunch anti-privatisation activist, this Act reinforced the standard World Bank pattern of reforms. He argued:

> The World Bank has emerged as a knowledge provider. The assumption was that the public utilities are desperate and in disarray and the only way to put them in

> order was full cost recovery to address their inefficiency. Therefore a body such as IRA was required to depoliticise this sector by setting up the tariff system, something that has been replicated in all the sectors. The purpose was to enable privatisation and advance a particular way of looking at water, the economic good approach to water (KI05).

He stated that by introducing the language of marketisation, the regulatory act subtly legitimises the use of water by the highest payer (ibid). Water trading thus became the galvanising point for activism. News items with titles such as "sponge bath for the future" (Rajshekhar, 2006) painted an ominous picture of a future with MWRRAA. There was a genuine fear among several NGOs that the MWRRA would take the "water debate out of the political arena, make it a commercial process, demolish ideas of social justice and entitlements, and take something as basic as water into the realm of negotiable rights" (Rajshekhar, 2006). The genuine fear underneath this resistance was privatisation of a public good, and the provision of water trading only amplified that fear. Dharmadhikary writes:

> The economic logic is that this trading will ensure that water is allocated to the highest value user - thus ensuring efficiency of use. What does highest value use or user mean? It means essentially money. A cubic metre of water used by a farmer on his land to produce a coarse cereal like *jowar* [sorghum] may yield only limited money to him. The same cubic metre of water used for a golf course will yield much higher profits. Thus, it makes for good economics for the farmer to sell his right to water to grow *jowar* to the golf course company (Dharmadhikary, 2007).

Water trading has been a contested area in the regulatory landscape since the drafting of the MWRRA Bill in 2003. Fear of privatisation charged the regulatory debate but, to the disappointment of civil society actors, these protests proved unable to influence the process and the outcomes radically, and the provisions on trading were retained in the 2005 Act.

6.3.3 Resistance from within

This resistance against the MWRRA was not merely limited to just the provisions for water trading and full cost recovery. There were certain other aspects that also moved the MWRRAA away from ownership and approval within Maharashtra. Foremost among these was the constitution of the Regulator itself. The regulatory body consists of a Chairman and two other members (experts) from water resource engineering and water resource economy, appointed by the Governor of the state on the recommendation of the Selection Committee, which includes

bureaucrats from various departments (Government of Maharashtra, 2005b). This makes MWRRA a non-majoritarian institution, i.e. one of those governmental entities that (a) possess and exercise some grant of specialised public authority, separate from that of other institutions, but (b) are neither directly elected by the people, nor directly managed by elected officials (Thatcher and Sweet, 2002).

There was much scepticism amongst the Department officials related to the creation of an outside body such as the MWRRA. One of the senior officials involved with the discussions on the Bill at Cabinet level noted that there were inhibitions regarding the constitution of the MWRRA, which would be chaired by the retired Chief Secretary, a civil servant. He noted that there was fear in the Cabinet regarding outsiders penetrating the "closed irrigation bureaucracy" and that this might make the workings of the regulator difficult (KI23). Outside of the bureaucracy, civil society organisations resisted the creation of the Regulator as "technocratic and expertocratic" (KI07). At the time of the fieldwork (2011-2012), among the four officials at the Regulator's office, 3 were engineers who had served in the water sector with the Chairperson being a retired civil servant and a field economist. Civil society actors argued that members trained in economic and technical aspects might not address the social and political aspects of regulatory decisions about a dispersed resource such as water (Joy et al., 2011). At the official level there were recommendations to include regional representation from the six administrative divisions, but the civil society organisations demanded further representation, of farmers and the social sector (KI23, Prayas 2010).

The Regulator's office became a sub-group of the Department as it was linked by an "umbilical cord of staffing and bureaucratic housekeeping" (Hall et al., 2000: :26). In fact, there was substantial overlap of the working staff either working on deputation from the Department or joining the Regulator's office post-retirement. The retired Chairman of the MWRRA commented on the implications of this overlap:

> In case of appointments, the Department coordinates with the Regulator. In water this is the odd thing that the Department is the service provider […] budget and other things are coordinated through the Department. The process has to be initiated by the Department and there is a little contradiction there because the

> Regulator depends on the Department for vacancies and budget and at the same time it is supposed to treat the Department as the service provider. There is a contradiction of sorts! In course of time, we could expect that the Regulator will be financially independent. It might take some time. It all depends on whether the government wants to have the Regulator and make it independent (KI23).

The Regulator made it clear that they are not subordinate to the Department but also that they will not "enforce or punish the department" as matters can be resolved amicably: "they are also our people" (K107). This 'mix and match' is also evident at the local level, where the local regulator is also an officer of the irrigation bureaucracy (discussed further in Chapter 7). The field level officers find it difficult to distinguish between the MWRRA and the Department as there is quite an overlap between the 'the processes and the people' at the top level. This cross-migration, which is justified on grounds of experience and costs, has smeared the independent image of the Regulator. It has also brought with it the hydraulic bureaucratic culture and its incumbent labels, to look at the water sector and its woes in the traditional closed sector approach.. For example, when I returned to Mumbai after the local level fieldwork, the staff at the MWRRA office was very keen to know what I had discovered during my study of the Jahot system. The wide range of questions included: "did you observe volumetric pricing? Were the meter gauges available? How did you measure the efficiency of water distribution?" (KI48, KI49)

The creation of the Regulator as an expert body prioritising technical knowledge of water, and as an un-elected body of retired civil servants, went down poorly with several actors. Besides being the Bank's creation, the Regulator also earned the reputation of being a body staffed with retired bureaucrats. This was a ground for resistance from both civil society organisations and the Department itself. It created a façade of independence since its officers were retired bureaucrats and most of them came from the Department itself. One of the officials defined the society as the "Maharashtra Water Resource Retired Personnel Rehabilitation Authority" (KI35). This nicely indicates the resistance within the Department. Another senior official involved with the project preparation expressed his disappointment over the regulatory design, which by-passed the arm's length principle and had reduced the Regulator to a "protégé" of the Department (KI27).

The Department defended this model of dominance on account of experience, but it also sowed the seeds of capture by the Department itself.

This section has revealed the limitations of the MWRRA in relation to its constitution, context and introduction of regulation into the water discourse of the state. The MWRRAA was an imported idea drawing heavily on the electricity sector, which added a spin to the regulatory discussion in Maharashtra. The constitution of the Regulator as a 'protégé' of the Department only added to this alienation and resistance within civil society as well as amongst some officers within the Department. This alienation and resistance, in the formative years, cast the MWRRA as an outsider in the water debate in the state. Post 2005, the MWRRA concentrated its efforts on developing the entitlements regime in the state. Six projects were chosen under the MWSIP to pilot entitlements, with the hope that they would be rolled out across the other projects in the next few years.

The term entitlement generated curiosity, skepticism and doubt among various sections of the bureaucracy, academics, activists and NGOs working in the water sector. The Bank advocated entitlements for reasons of efficiency and with the idea of introducing water markets for water trading. The next section will show how this rationale was contested, challenged and diluted through the regulatory spaces and eventually became a powerful tool to trim the mandate of the MWRRA in Maharashtra.

6.4 Technical rules, Political Results: the discursive politics of entitlements

The MWRRAA defines entitlements as use rights: as "an authorisation given by the RBAs to use water for the purposes defined in the Act" (Government of Maharashtra, 2005b). However, water entitlements are not ownership rights but rights to use water, defined in the volumetric sense. Such entitlements cover both surface and sub-surface water sources. (Government of Maharashtra, 2005b). While the MWRRA allocated bulk rights, the basin organisations and, at a lower level, user organisations were given responsibility for day-to-day monitoring and enforcement.

For the Bank, entitlements meant a formal water rights system, leading to voluntary transfer of water, "making reallocation both politically attractive and practical" (Briscoe, 2005). For Briscoe and Malik (2006), entitlements lay at the heart of the 2005 Regulatory Act. To start with, the MWRRA established bulk water entitlements, even though the Bank placed emphasis on individual entitlements. However Prof.Maria Saleth, writing in defence of the (temporary) bulk water entitlements argued that while establishment of individual and transferable water rights was a long term strategy, the Bill had adopted a "politically and administratively pragmatic intermediate strategy of issuing bulk water entitlements" (Saleth, 2007: 300). Thus bulk water entitlements were a stop – gap arrangement which would eventually translate into individual entitlements.

However, the official framing of entitlements digressed from the Bank's framing in two key ways. Instead of individual entitlements, the MWRRA instituted bulk water entitlements (KI21, KI26). Explaining this digression, the MWRRA official remarked:

> The World Bank model is different and they want to go beyond trading. They wanted a concept of individual entitlements where we should build a model in which the farmers within the WUA should also trade. Our response is, in any case, they can do it informally; there is no need to have formal rules (KI21).

The Department officials defended their decision, arguing that "models of Chile, Australia and South Africa where farmers have large landholding could not be imported to the context of small landholders in India where average landholding size is two acres of land" (KI26). They defended their decision of implementing bulk entitlements instead of individual entitlements as both practical and manageable. Moreover, the Bank's position on entitlements was that they were like any other property right which provides legal certainty, but should be delinked from land rights. However, the MWRRA Act froze these entitlements to landowners in the command area. The officials were unable to imagine the possibility of giving entitlements to people without land since irrigation water is only meant for agriculture. This limited the use of water to productive uses and downplayed its value for domestic uses (see Chapter 4 and further discussed in Chapter 8).

Moreover, for the Department officials, there was also an inherent fear underlying the entitlements. A senior official revealed that several officials feared that if entitlements were strictly defined as legally backed rights for farmers, "they might have to face the court every other day" if they failed to deliver water (KI26). Therefore entitlements were not as normatively charged as water rights in other countries such as South Africa where equity and social justice are central to the water allocation reform (see Movik, 2012; Woodhouse and Chhotray, n.d.).

Thus, though the MWRRA Act made entitlements legally enforceable, it also imposed several riders on the concept of entitlements. For example, entitlements are further broken down into: sanctioned water entitlements which are fixed on the basis of capacity of the system to deliver water; applicable water entitlement for the particular year contingent on water availability in the reservoir; and entitlement during the scarcity period. This differential framing of entitlements undermined their enforceability and equated them with quotas (Upadhyaya, 2005). Finally, the water that was delivered to the water user entity per season was still called the quota. As much as the Act created different types of entitlements, the policy language used to describe these entitlements was still 'quotas', similar to what had existed before the reforms. Mosse (2004) rather argues that policy goals and their project instruments do not bear a singular rationality: they are a result of complex negotiation over meanings. Likewise the concept of entitlements has a certain degree of ambiguity and this very ambiguity has not only provided the space to manoeuvre but also undermined the rights based potential of entitlements.

Civil society activists have contested this conceptualisation of entitlements as an efficiency centric principle and advocated the principle of equity in entitlements. SOPPECOM, for instance, advocates for a rights-based framework, which prioritises basic needs, livelihood needs, environmental and socio-cultural needs, while also allowing for economic use of water (Joy et al., 2011). SOPPECOM's livelihood framework is similar to the ethic which lay beneath the *pani panchayat* model (see Chapter 5). They also support delinking land rights from water entitlements, and draw a clear line of separation from the Bank's position:

> For the World Bank, the rationale for delinking water rights from land rights is to make it a commodity. For social movements and grassroots initiatives committed

> to the equity agenda, the rationale for delinking of water and land rights [is] to create access to the resource poor sections including the landless (Joy et al., 2011: 14).

While several other civil society actors support SOPPECOM's demand for delinking water rights from land, they are wary of operationalising this rights framework. Prof. Purandhare, a retired Professor at the Water and Land Management Institute (Aurangabad), is severely critical of the way reforms have unfolded in Maharashtra. Having observed them since 2001, he is sceptical whether "rights to the landless" can eventually be worked out (KI16). Likewise others also made his scepticism apparent, stating that rights to the landless may be a distant dream, and "first we need to work on getting water to the marginalised farmers in the command areas of the project" (KI07).

So when the MWRRA hosted a meeting about water trading in January 2012, it created quite a stir in the policy circles. A draft paper on water trading was circulated by the MWRRA to elicit responses from various sections (MWRRA, 2012). This meeting was attended by several NGOs and representatives from the Department. In the draft paper, the Regulator proposed the provisions of "trading within the sector for now" but did not rule out the possibility of inter-sectoral trading. Pitched in the rights language, the organisations representing several sections of Maharashtra were critical of the use 'commoditised' language of trading. A seasoned political activist argued:

> The first step is to give equal rights to water […] Water distribution is not happening according to the principles of social justice. First they (farmers) should get water and then we should think of trading […] the substitute for the use of trading is sharing; how can you include a market oriented concept? Water is an important constituent for social development […] we cannot permit business on *hakkadari* (entitlements) It is a bluff (Field Journal, January 2012).

This meeting reinforced the significance of situated meanings in the policy discourse. The resistance to the idea of trading not only reemphasised the anti-privatisation, anti-commodification position of several civil society members, but also voiced their stringent opposition to the anti-expert character of the Regulator. This meeting further opened the debate on entitlements; the discussion was not just limited to its conceptualisation of commodity vs. rights, but also included issues of implementation of entitlements in the state from 2007 onwards. It touched upon the character and implementation of reforms, the poor condition of

water delivery and infrastructure and the near absence of entitlements in most of the field sites. This meeting thus opened up a previously closed sector to scrutiny from the outside.

Since the conception of the MWRRAA from 2000 onwards, entitlements and trading have been viewed suspiciously by civil society. The Bank, the Department and the Regulator conceptualised entitlements as a tool for efficiency. They came up with elaborate criteria and calculations to determine entitlements based on the optimistic assumption that standardisation of service would ensure equity in distribution. However, the mobilising point for civil society was on the grounds of equity and distributive justice. They saw the Act as laying a duty on the State to provide water, and more radically as a protection of the rights of farmers to receive water. In time, entitlements also became the grounds for opening a discussion on the character and implementation of reforms. The Regulator, however, remained reticent about its proactive role. One of the officials stated:

> Everyone wants to fire from our shoulders and to make us fight for their cause. This is not the job of the Regulator. Probably civil society wants a proactive Regulator but that is not possible as we function strictly within the boundaries of the Act (KI21).

Within the regulatory space of Maharashtra, the introduction of entitlements as formal rights backed with legal certainty was a positive measure but the actors' opinions differed from each other as to the purpose and goals of these entitlements. For the Bank, entitlements were half-way to water markets where water could be allocated to the highest bidder. The Department officials in Maharashtra saw them as legal fetters and wanted to keep the intent of the Act as narrow as possible and thus entitlements came with several caveats. The MWRRA interpreted the Act to the letter and was not willing to push the boundaries. Civil society actors, though sceptical of the market-oriented origins of entitlements, were keen to push the idea in the direction of equity and some, such as SOPPECOM, extended it to a rights based framework.

This section has shown how entitlements were narrowly defined in the policy language and how civil society tried to extend their scope. From 2007 onwards, the Regulator began to pilot entitlements in five selected sites (Ghod, Kukadi,

Mangi, Diwale and Benikre), with the intention of rolling them out to all the projects in the state in the next six years. However, from 2008, certain developments in the Vidarbha region[91] related to the Upper Wardha project began to shape the politics and future of entitlements. This had an enormous impact on the jurisdiction of the Regulator itself. The next section shows how entitlements became a battleground for the jurisdiction and existence of the Regulator.

6.5 The Politics of Sectoral Allocation: the 'shrinking' of entitlements (2008-2011)

Prior to 2005 MWRRA Act, a High Power Committee (HPC)[92] decided on water allocation in Maharashtra. These decisions were often based on ad hocism and political opportunism (Wagle et al., 2012). In order to avoid the influence of government, and in accordance with the rationale of 'independent' regulation, the Regulator was given the mandate, by the 2005 Act, to determine and enforce entitlements for drinking, industrial and agricultural purposes (Government of Maharashtra, 2005b). While the Regulator was piloting the use of entitlements in six projects, a controversy regarding the illegal transfer of agricultural water to industry achieved political dimensions. This case was referred to the High Court (by the aggrieved group of farmers) stating that diverting water without the sanction of the Regulator was an encroachment of their rights and therefore illegal. The case refers to the Upper Wardha dam controversy in Vidarbha region of Maharashtra.

The Wardha case spurred the government into action which was intended to clarify the role of the state government vis-à-vis sectoral allocation and entitlements. (Writ Petition No. 1038/2010, 2010a; Government of Maharashtra, 2011d). However this Amendment had a major impact in revising the regulatory space in Maharashtra since it substantially affected the powers of the Regulator. This section looks at the politics of allocation through the case of the Upper

[91]Vidarbha is the Northern region of Maharashtra covering the Nagpur and Amravati divisions. See Chapter 5 for a discussion on regional development.

[92] The 2003 Water Policy of Maharashtra accorded higher priority in water use to industry over agriculture. This was followed by a promulgation of a Government Resolution, which provided for the constitution of a Ministerial Level Committee, the HPC. It was constituted to make decisions on allocating and reserving water for non-irrigation uses based on a high priority being given to industry (Wagle et al., 2012).

Wardha dam, which revised and reshaped the definition of the entitlements and thereby the role of the MWRRA in the Maharashtra.

6.5.1 The Upper Wardha case

In 2008, the HPC decided to transfer 87.60MM^3 water from the reservoir of the Upper Wardha project to a thermal power project and defended the decision on the grounds of the water allocation priority listed in the SWP 2003, which placed industry ahead of irrigation (Government of Maharashtra, 2008). This case of water diversion from agriculture to industry resulted in the loss of 23,219 hectares of irrigated area and increased the non-irrigation use of water from the reservoir from 19 percent to 32 percent (extract from the Writ Petition No. 1038/2010, 2010b). In a Public Interest Litigation (PIL) filed in 2009 at the state High Court, this decision was challenged on two grounds: first, Vidarbha has a special status for Backlog Prevention and thus this decision to divert water was a violation of Article 371 (2) of the Indian Constitution[93]; second, the decisions on diversions infringed the authority of the MWRRA as per the provisions of the 2005 MWRRA Act, whereby the Regulator had the right to determine water allocations (ibid).

The petitioners noted that the MWRRAA 2005 empowers the MWRRA to regulate and allocate water for "different categories of use" (domestic, agricultural irrigation, agro based industries, industrial or commercial, environmental etc.). These were interpreted as powers of sectoral allocation, through determining the criteria for issuance, modification and monitoring (extract from the Writ Petition No. 1038/2010, 2010b). The HPC therefore had bypassed the authority of the Regulator[94] by deciding on diversions for a project for which entitlements had not been duly calculated by the Regulator.

While this case was *sub judice* the state legislature moved two successive Ordinances (2010 and 2011) to amend the MWRAA Act (2005), the final amendment being in April 2011. In this intervening period, civil society actors

[93] Article 371 of the Indian Constitution (Government of India, 1950) provides special powers to the Governors of the states of Maharashtra and Gujarat, under the directives of the President of India, to provide for: separate development boards in the regions of Marathwada and Vidarbha in Maharashtra or any area of Saurashtra and Kutch; and also for the equitable allocation of funds in these areas. This is to redress the issue of balanced regional development in these two states.

[94] Under Section 21 of the MWRRAA (2005), the Authority also has special responsibilities with regard to the backlog regions as per the Governor's directives.

galvanised under an umbrella platform called the *Lokabhimukh Pani Dhoran Sangharsh Manch* (MANCH). This included several civil society organisations, independent activists and academics working on water issues in Maharashtra. *Dharnas* (sit-in protests) were organised outside the legislature and pressure mounted to stall the amendment. MANCH opposed the Ordinance, and the amendment bill could not be passed in the following inter session of the state legislature in 2010. Taking cognisance of this, the government revoked the Ordinance and issued a fresh one for the next six months. In the summer session of April 2011, MANCH resisted the tabling of the bill, but could not prevent its passage. The Bill was passed clandestinely in the middle of the night, at 1.30 AM on 14th April, the only working day between two holidays (Prayas, 2011). This clearly was a deliberate strategy to evade the mounting resistance. In the light of the protests against this pro-industry move, the government decided to amend the allocation priorities in the State Water Policy. It now gave a high priority to agriculture over industry, but retrospectively provided immunity to all decisions on diversions. The amendment stated that diversions which had been approved by the HPC before the promulgation of the 2010 Ordinance could not be challenged in court and "shall be deemed to have been granted in accordance with the provisions of this Act"(Section 6 (31B),Government of Maharashtra, 2011c)[95].

The amendment clarified the roles of the state government and the MWRRA in relation to allocation of water (Government of Maharashtra, 2011c). It stated that the Cabinet has the sole authority to determine allocation as these decisions have a bearing on the economic development of the state (Government of Maharashtra, 2011d). The state Cabinet now had the power to determine the allocations for various categories of use (drinking, industry and agriculture) and the Regulator would determine entitlements within those categories.

The amendment also created a distinction between sectoral allocation and entitlements (understood to be the same under the 2005 Act) and made entitlements subservient to the category of allocation. While the initial Act of 2005 defined the powers of the Regulator vis-à-vis the entitlements as to "determine the distribution of entitlements for various categories of use and the

[95] See appendix 11.4 for the relevant provisions of the Act.

equitable distribution of entitlements within each category" (Section 11 (a), Government of Maharashtra, 2005b), the Amended Act 2011 revised and limited that power "to determine the criteria for entitlements" (Section 3 (1) (a), Government of Maharashtra, 2011c)[96] thus reducing the mandate of the Regulator to determining criteria instead of enforcing its entitlement prerogative.

Furthermore, the amendment ensured that entitlements are only applicable within projects, which are delineated under the MMISFA Act (insertion 31A) (Government of Maharashtra, 2011c). This effectively reduced the regulatory reach of the Act to the 226 projects taken under MWSIP and some of the old projects which were transferred from the Cooperative Act to the new MMISFA Act.

The amendment brought to light the policy obscurity (Wagle et al., 2012) at the state level where much of this vagueness had resulted from the imported concept of independent regulation. The lack of debate within the legislature in the formative years led to this situation. Cullet et al. (2010) claim that reformist legislations, congruent with international commitments, are often a big bang approach, rather than a long process of evolution that progressively adapts and updates existing laws in areas that have been unregulated in the past. The amendment controversy also underlined this fact. In 2005 when the initial Act was tabled in both houses of the legislature, there was minimal discussion on the nature of changes and the implications of this Act. Even the Joint Committee convened to discuss the Act did not suggest any major revisions in its provisions (Government of Maharashtra, n.d.).

Introducing the Act, Mr. Ajit Pawar, the irrigation Minister, reinforced the scarcity situation in Maharashtra, and the importance of the MWRRAA and distribution of water. However, most of the discussions related to imposing high water charges for farmers with more than two children (Maharashtra Legislature, 2005)[97]. It is evident from the report and the discussions that were held between

[96] See appendix 11.4 for the relevant provisions of the Act.

[97] The Joint Committee also made some recommendations but these focused on water for irrigation and not the inter-sectoral implications of the Act. Some of the recommendations of the Committee related to use of water distribution, priority in water distribution, increase in irrigation potential, incomplete irrigation works and use of volumetric supply of water to farmers, etc. (Government of Maharashtra, n.d.).

2003 and 2005 that intersectoral water distribution was considered only superficially, and there was a conspicuous absence of any debate over the implications of concepts such as entitlements (Maharashtra Legislature, 2005; Government of Maharashtra, n.d.)

However, the Upper Wardha case (2009) was an eye opener for the political arm of the State, which was spurred into action, producing Ordinance and amendments from 2010 onwards. The discussions in the state legislative assembly and state legislative council are testimony to this fact. In the legislative discussions, the Minister for Irrigation provided "clarification" for the Amendment, stating that MWRRAA is in contravention of the Maharashtra Irrigation Act, 1976, which gives the government power to determine allocations, and that therefore it was urgent to clarify the role of the government (Government of Maharashtra, 2011e; Government of Maharashtra, 2011b). He also asserted that the government had "the right to make sectoral allocations as in a democracy, this right resides with the elected representatives of the government" (Government of Maharashtra, 2011e: 3). Though these discussions were dominated by debates on lopsided regional development in Maharashtra, with special reference to Vidarbha and Amravati regions, even within these discussions the debate focused not so much on "who has the authority to decide" but the politics of regional development within the state.

The character of the legislative debate, about the introduction of the Bill in 2005 or about the amendment in 2011, is symptomatic of a particular politics of contingency which revolves around preserving the interests of powerful players and appeasing certain constituencies, especially the industry. From 2003 to 2010, the HPC diverted approximately 2885 mcm (million cubic metre) of water from irrigation to non-irrigation uses across 43 dams in Maharashtra, where 31 percent of dams are in Vidarbha (Prayas, 2010b; Greenpeace, 2012).

The MWRRA official agreed that entitlements could protect such diversions, but not for long because under the provisions of the Act entitlements must be reviewed every three years. Irrigation must give way to other uses that are congruent with the development priorities of Maharashtra, pointed out another MWRRA official (KI21). In the policy circles of Maharashtra, the image of an

industrial and rapidly developing and urbanising state is increasingly used as a strategic metaphor to limit irrigation use. However, these diversions are often politically motivated rather than part of a strategic policy toward irrigation reform. The Upper Wardha project is located in the underdeveloped and politically weak constituency of Vidarbha (Chapter 5), and has now become the powerhouse for the rest of Maharashtra. This region also has one of the largest clusters of water-guzzling thermal power plants. For example, a Greenpeace (2012) report states that by 2010, Vidarbha had over 71 thermal power plants at various stages of approval. It also states that between 2003 and 2011, nearly 398.87 mcm of water was diverted from agricultural to industrial uses per year, a volume capable of irrigating 77, 794 hectares of farmland (ibid).

Thus protection against diversions through entitlements could not now be legally enforced in the non-reform/ non-MWSIP projects. This political wrangling also shows how the water resource regulator to a great extent became an irrigation regulator chiefly responsible for bulk uses and intra sectoral water uses. An MWRRA official in the regulatory office described it as follows:

> The basic doubt is [after the amendment] whether we are a water regulator or an irrigation water regulator. If we are a water regulator, we should decide with our job on sectoral allocation and water allocation for domestic purposes. This was a grey area in the Act and with the amendment Act, this has been clarified (KI22).

This exercise of clarification also turned the MWRRAA into "a toothless tiger" (KI22). Though it continues to deal with uses of water, it does not have the power to allocate. One of the Department officials registered his disapproval and said, "The politicians should not have done this; the soul of the MWRRAA has been taken away and now the body is redundant" (KI32).

My fieldwork started in the aftermath of this amendment and there was a great deal of scepticism in the MWRRA office. As some MWRRA officials complained about the political invisibility (KI22) of the MWRRA, another official warned me that "by the time [I] finish [my] fieldwork, the MWRRA may not be around" (KI22). This changed climate in the light of the amendment had far-reaching implications for the regulation reform, which started in 2005. The following section shows how the amendment decision was received by various actors and what it meant for the regulatory mandate on entitlements.

6.5.2 Of laws and authority: challenging the regulatory mandate

The response to this amendment was mixed. Though in principle the conditions of the Bank loan had been transgressed through this amendment, the Bank continued to support the MWSIP. Moreover the amendment came into force in 2011 when the MWSIP was in its last year of operation. A Bank official defended its position, saying:

> A Regulator has no business to make policy especially in a democracy. The job of the Regulator is that of an umpire. It needs to reconcile with realities (KI02).

While the Bank seemed to accept the political realities of Maharashtra, sections within the bureaucracy, the Regulator and the civil society were divided on the legitimate role of the Regulator in terms of its right to determine allocations. The amendment brought to light the problems of the regulatory mechanism's institutional design and exploded the myth of the independence of the Regulator in a state with an industrial mandate for development. It also pointed to the fact that the Regulator faced legitimacy crises in the state: several political parties, civil society groups and some sections within the bureaucracy opposed the mandate of the Regulator itself. There are four key issues that emerge from this politics of amendment.

The first relates to the contestation within civil society. Some organisations such as SOPPECOM and Prayas had opposed regulatory intervention since the start in 2003. They saw the MWRRA as a creation of the World Bank, put in place to pave the way for water privatisation. For them, the amendment was a welcome move to curtail the powers of the MWRRA. However, they resisted the idea that the power to allocate water should be transferred to the Cabinet and not to the legislature; they termed this change a transfer from 'one expert body to another', which would still leave allocation undemocratic (KI08).

The second issue relates to the legitimate role of the Regulator in water resource management and the development of the state. The amendment meant redrawing the jurisdiction of the Regulator. Some senior officials from the Department as well as the MWRRA concurred that the original Act had been vague about sectoral allocation and the amendment had clarified this role. However, it is also true that until the 2010 Ordinance, the MWRRA had interpreted sectoral allocation as being within its mandate. Several documents and presentations made

by the MWRRA officials at different forums verify this fact (Sodal, 2009; Sekhar, 2011). This amendment made clear the distinction between entitlements and allocation, and made entitlements subordinate to the category of allocation. It restored the right to determine entitlements with the Regulator, but qualified the implementation of entitlements to irrigation with a caveat that they would only be implemented in projects where WUAs were already in place (Government of Maharashtra, 2011c). From 2008 to 2010, until the Ordinance came in, this deadlock resulted in several cases of water grabs and illegal diversions[98]. It therefore limited regulatory reach and veritably removed the politically sensitive decisions about allocation from the body which had been created to take such 'political' decisions in 'apolitical' ways. One of the officials clarified the role of the Regulator in the following way:

> Our decision is to let the economic planning be with the government and since sectoral allocation is an important constituent of economic planning, it will be in the domain of the government. It is the government that will decide which user should be allocated what percentage of water (KI21).

The third and the most significant point is the role of the political leaders of the State. The amendment politics is in line with Lele's (2000) argument that the political arm of the state cannot be bypassed for long in matters affecting water policy. Several sections of bureaucracy and civil society read in this amendment the malafide intentions of the politicians or a deliberate strategy of policy obfuscation to promote water grabbing, since the legislature showed 'great urgency' to amend the Act even before the court gave its verdict on illegal diversions (Wagle et al., 2012). By making the establishment of the WUAs a mandatory condition for the enforcement of entitlements, the amendment pushed the agenda of judicious allocation of water resources into some distant future and made the non-MWSIP project sites amenable to illegal diversions. A member

[98] While the Upper Wardha case was sub-judice, the Regulator received a petition related to a case of water diversion in May 2010 from agriculture to industry in the Hetavne. The Regulator put the case on hold until judgment was made on the Upper Wardha case. In the case, *Professor ND Patil and others vs. Chief Engineer, Konkan Region,* and others, the petitioners approached the Regulator citing section 11(a) of the 2005 parent Act, which gave the Regulator the power to determine and distribute entitlements (Case no. 3 of 2010, 2010). However with the Ordinance (Government of Maharashtra, 2011d) and Amendment (Government of Maharashtra, 2011c), the case was dismissed in face of a similar defence of amended authority, as in the case of the Upper Wardha.

from Gomukh outlined the predominant role of the legislature in drawing the boundaries of regulation in the following way:

> How much does the legislature want to push in and make it [the power of the Regulator] a broad spectrum? If the legislature was interested, the Regulator could have been powerful but the mandate has been kept thin by intent. The political intent of these reforms is quite narrow. Moreover the changes that the MWRRA wants to introduce, such as accountability etc., are fairly ambitious and difficult to come by because of the attitudinal baggage of the colonial and feudalistic ties, the centralised nature of the bureaucracy and the existing inertia within the Irrigation Department (KI18).

This politics over allocation redefined the concept of entitlements, from inter-sectoral and limited it to intra-sectoral. Now the MWRRA was responsible for distribution of water within sectors once the allocation priorities had been decided by the ministerial Cabinet. Entitlements in the irrigation sector inextricably tied it to the provisions of the MMISFA, a domain of the Department. The MMISFA required several criteria of delineation and rehabilitation to be fulfilled, which also required financial approval from the Department. The Regulator asserted that it was the government's prerogative to take projects under entitlements, and it could not intervene on allocation and diversion issues in non-MMISFA projects (KI21).

While the amendment had clarified the role of the Regulator, it also brought to the fore its reticence to adhere to a reactive rather than a proactive role. The NGOs had pushed for a proactive regulator, one that needed to intervene in projects by speeding up the entitlement programme and establishing the principle of equity, as promised in the Preamble of the Act. However the Regulator maintained that it could not transgress the Department's prerogative of taking up the entitlement programme. This position also highlighted the 'disputed' role of the Regulator vis-à-vis the entitlement programme in the post-amendment period. Since the Cabinet was "dragging its feet on sectoral allocation" (KI21), the Regulator could not intervene in cases of illegal diversions unless they came within the entitlement programme. This was a prerogative of the Department, and the MWRRA needed to receive a complaint regarding transgression of entitlements before it could get involved. One senior MWRRA official remarked:

> The Authority can only be a catalyst and motivator of the department. To expect that the authority will be leading the entitlement programme is wrong. The entitlement programme is of the Department. The Authority is only a regulator

> and fixing the criteria and tariffs; other things have to be done by the department as they have the staff to do it (KI22).

The amendment also led to a certain devaluation of the entitlement function within the MWRRA. The weightage varied according to the preference of each of the four members of the Regulator. The Chairperson maintained that entitlements were no longer a key role of the Regulator in the absence of sectoral allocation, and that tariffs should be the Regulator's main focus. Moreover there was general acceptance of its role in issuing tariffs, among politicians and with some contestations, within the civil society (KI22). Entitlements on the other hand were neither subject to such public consultations nor could be made technical, apolitical or scientific now. They were already being discursively shaped in the regulatory space of Maharashtra.

This shift in emphasis also meant a degree of confusion over the ownership of the entitlement programme between the Department and the Regulator, and created problems of jurisdiction, control and accountability. The ambiguity only reinforced a culture of blame. One of the members in the Regulatory office maintained that -

> The Department does not own the entitlement programme. They have formed the WUAs and given them entitlements [and argue that] it is the work of the Regulator from there. What we are saying is that the whole entitlement programme belongs to the Department. Our job is to fix the criteria. The Department tells us that the field level officers are at your beck and call. They send reports but the Department doesn't know what is going on […] We should monitor the Department and not the field level officer! (KI21)

On the other hand the Department maintained that entitlements were the Regulator's project and they should monitor and implement them (KI26). Bridging these two extreme positions, there were some officers in the Department and in the Regulator who maintained that entitlements are more diffused than tariffs, and it was thus a "joint responsibility" of the Department and the Regulator (KI24). The reformist discourse on regulation was premised on the myth of an independent Regulator which would ensure efficient and transparent decision making, with clear lines of accountability. This discursive politics over the entitlements shows how these ideas of regulation faced critical challenges in Maharashtra.

6.6 Conclusion: the dynamics of regulatory space

In this chapter, I have shown that the regulatory space at the state level is defined by the interplay of several actors, which include civil society organisations, the Department, the Regulator and the politicians. I argue that the Regulator faced several major obstacles from the very inception. The primary reason for these crises was the fact that the Regulator had entered the policy space in Maharashtra through the World Bank initiated MWSIP project. Some sections of civil society, despite their oscillating positions, were highly critical of this regulatory project as they saw it as an 'import from above' or as an assertion of authority on the part of retired bureaucrats, while officials within the WRD saw it as an 'invasion of outsiders'. This impeded the introduction of the Regulator in the institutional landscape of Maharashtra. Moreover, analogies with electricity sector regulation and fears of privatisation fuelled this scepticism to the point of alienation.

One of the significant reasons for the fragility of the regulation project is the ambiguity regarding role of the Regulator in Maharashtra and, more specifically, in terms of water regulation there. At one level these ambiguities resulted in comparisons with the electricity sector, and on the other, they undermined the possibility of informed dialogue and deliberations in the formative years. The role of the Regulator was never clear in the minds of state policy makers. In fact, the MWRRA Act was drafted by consultants from the Bank and adopted with very limited revisions by the legislature. The ambiguity and uncertainty came out very clearly in defining entitlements, which were at the heart of the Bank's idea of regulation. Inter-sectoral entitlements were reduced to intra-sectoral, thus overturning the mandate of the Regulator as an arbiter for inter-sectoral conflicts. The lack of debate in the formative years of reforms (2000-2005) created fierce contestation regarding the regulatory mandate once the political leaders understood that they had legislated for an institution that could challenge their domain of power. This is explained through the discursive politics over entitlements, which led to a turf war at the state level.

It is evident that there is no one particular framing of regulation at the state level, as each of the actors viewed regulation from their particular vantage point. The Bank's idea of regulation was premised on the logic of depoliticisation, scientific water pricing and clearly defined individual water entitlements, which would

enable water trading, leading to allocation of water to its high value use. The official framing in Maharashtra digressed from this framing with the conceptualisation of entitlements as bulk use rights, and tied them to land ownership. By creating 'confusions' over quotas and entitlements, the legal scope of the entitlements became extremely narrow. Also, the politics over sectoral allocation clearly showed the implications of depoliticising a politicised resource. Furthermore, the rights-based framework of entitlements put forth by civil society organisations also resulted in contestation over meaning, with special reference to water trading, and more significantly over entitlements as weapons against illegal diversions.

This discursive contestation over the making of regulation highlights the complexity of the policy process at the state level. Central to this complexity is the agency of the State itself. The State here is formed through diverse practices. These include: the interactions of the civil society and the irrigation bureaucracy; the capture of the Regulator by the Department and the maintenance of policy obfuscation (Wagle et al., 2012). These have resulted in diluting some of the core concepts of 'independent regulation'. The digressions in the framing of entitlements showed the key ways in which the State used its discursive power to capture the idea of regulation. Moreover the politics over sectoral allocation ended up in a direct assertion of control by the State. Also significant in this politics is the way actors perceived the jurisdiction of the State, represented by the legislature in the case of the amendment. Even civil society actors maintained that the power to make legitimate decisions regarding development rested with elected representatives rather than with an independent regulator. This demonstrated the alienation the Regulator faced in Maharashtra. Despite this alienation, civil society in Maharashtra has played a proactive role in challenging the opaque process of reform. They have used the consultation platform to highlight the gaps and lacunae in the implementation of reforms. Their agile use of the media following certain regulatory activities or consultations created a counter force to the traditional pattern within this sector of opaque style of working.

The legislature and political parties engaged in a politics of contingency. Though their interaction is visibly limited to two cases at the state level, i.e. passing the

2005 Act and ordinance and the amendment Act 2009-2011, it changed the path of regulation in substantial ways. This is evident from the controversy over entitlements and allocations. In terms of the effects, the amendment defined the jurisdiction of the Regulator, but it also raised some very serious questions regarding the democratic process and the role of the legislature in this reform process. The amendment politics raked up all these issues simultaneously because the character and manner of the amendment, that is to say the extraordinary haste exercised in passing it, was indeed politically motivated.

By highlighting the contested role of the MWRRA and the fractured regulatory mandate in Maharashtra, this chapter showed the transformation of regulation from a technical and apolitical concept to a political and contested concept. This is analysed further in the following chapters, which provide an account of the politics of entitlements in the Jahot canal system. They show how entitlements are shaped by the wider politics around and on water in the prosperous, politically powerful sugarcane belt of Western Maharashtra.

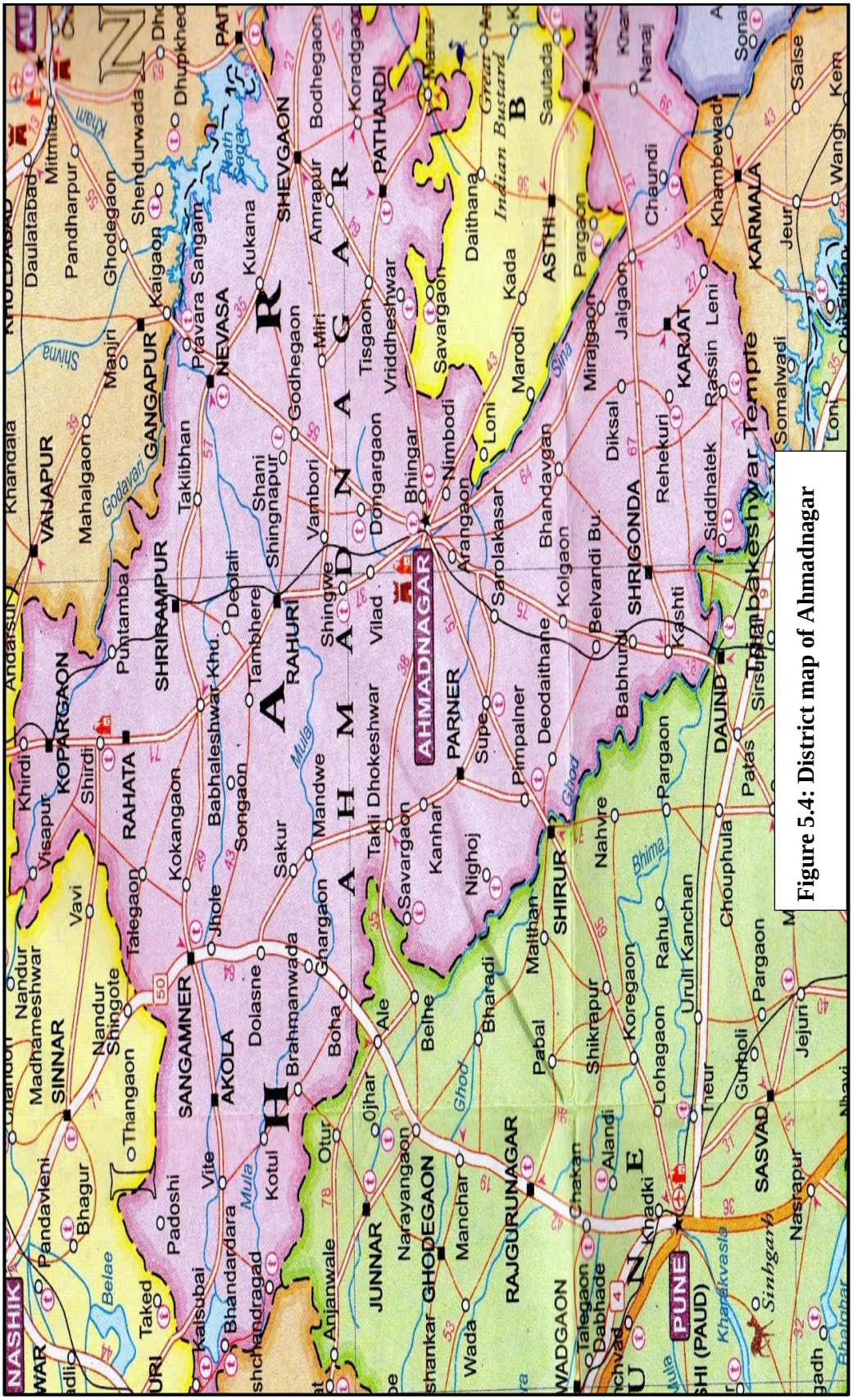

Figure 5.4: District map of Ahmadnagar

7. Plural Cultures, Plural Norms: Reforming the Jahot System

> For these last two months, I have wondered about the rationale of upscaling the 6 pilot projects on entitlements to 226 projects as I fail to see any material presence of these reforms. Even though civil society resists these reforms, arguing that they are neoliberal, and that they emphasise the retreat of the State, I see the State everywhere: in the section officers' lament on the rise of politics and the decline of the irrigation Department's supremacy; in the farmers' description of *shaasan* (Department) and water distribution; the tussle for authority between *sarkaar* (politicians) and *shaasan* (bureaucrats); the 'us' and the 'them'; and probably in the everyday battles for ownership of water that are fought over the canals and outlets in different locations of section offices, district headquarters, morning *chaupals* (meetings), sugar factories, tea stalls...
>
> Field Journal (February, 2012)

Introduction

By December 2011, the amendment politics had fundamentally altered the nature and jurisdiction of the MWRRA. The altered definition of entitlements, from inter-sectoral to intrasectoral, had a corresponding effect on the nature and site of my project-level work. Entitlements now were closely linked to the implementation of the MMISFAA, and entered the contested terrain of the Department-farmer relationship. This chapter focuses on this tenuous relationship and analyses how entitlements are translated into practice, and how relationships of control are altered and perpetuated in this process. I argue that the content and jurisdiction of regulation are inextricably tied to questions of responsibility and accountability of the actors in the Jahot system. However these boundaries are becoming increasingly blurred as the regulatory space is decentred with different sites and actions of power. These include the prosperous sugarcane farmers, heads of cooperatives, political leaders and the field officers. Entitlements here become subsumed into discussions over rehabilitation, constitution of user groups and the embedded role of the local regulator. These constitute the key axes for the creation, maintenance and proliferation of plural regulatory cultures in the Jahot system.

In January 2012, I arrived at the Jahot canal system after a two-hour journey from Ahmadnagar city. As the government jeep drove through the canal roads, passing bullock carts laden with sugarcane ready to be delivered to the factories, the liaison officer explained to me how things have changed politically. He lamented how politics is responsible for the decay of the water management system.

> (looking scornfully at the bullock carts) he told me how there was a time when these common people (*yeh log*) could not use this canal road as a thoroughfare, how they were scared of the word *shaasan*, and now they look into our eyes if we ask them to move. Politicians have spoilt them (KI41).

This officer who took particular pride in the exclusive and powerful position of the Department was now annoyed that politics has 'breached' this relationship of superiority and reverence. I could scarcely have known then that I was just being introduced to the intricate balance of power in this canal system (Field Journal, January 2012). Upon my arrival in Jahot[99] I was received by the irrigation officials, surprised and curious to understand the focus of my survey. I informed them that I was there to study how water entitlements work. They instantly corrected me, saying that these were quotas. At that point I could not understand the distinction between the two. They conflated my study with the study on WUAs and announced their conclusion about the ongoing reforms as "WUAs will not work madam! People do not want them. It is like selling *sarees* to women who wear *salwar kameez*!" (Field Journal, January 2012). I found the analogy particularly gendered, especially so when the farmers in the discussion were inevitably male. However, I was more perplexed to see that entitlements were being conflated with farmers' participation. I had come to Jahot with the understanding that entitlements were as much about the rights of the farmers as they were about claims on the Department. It is for this very reason that the officials in Mumbai had tried to keep the intent of entitlements as narrow as possible, as discussed in the previous chapter.

I wondered if this response was part of bureaucratic resistance, of ignorance about entitlements, a product of translation at work, the logic of top down approach or the agency of actors. Through a day-long conversation with section officers, I realised that the vocabulary of entitlements or *paani hakkadari* (Marathi term for 'entitlements') had not reached here, or, more probably, it was too early to expect it, or it was evolving in context-specific ways. The official records that brought me to Jahot showed that entitlements were being allocated on this site from 2007 onwards. They were in fact upscaled to the whole system from 2010 onwards. Jahot was also one of the first pilot sites to be taken under the

[99] Jahot is a canal system but in this thesis I have also used it to signify the place and the offices that came under the jurisdiction of the project.

entitlement programme of the MWRRA in 2007. It thus offered a fertile site to study the reform process and understand the making of regulation, through entitlements.

This chapter analyses the different ideational, social and political factors that shape the regulatory framework in the Jahot system. In section 7.1, I situate the Jahot system in the socio-cultural and political context. I then begin to understand and unpack the meaning of entitlements in section 7. 2. Here I focus on the field officers who are responsible for calculation and distribution of entitlements. Following this discussion, I highlight how the discourse of entitlements is tied to the unfolding of reforms in the Jahot system (section 7.3) and how this process has redefined the nature, scope and content of entitlements. I argue that entitlements exist in parallel with different relations of power that have developed over time, around water, in the Jahot system. These, however, are neither necessarily equal nor uniform across the Jahot system, but are tied to the sugarcane economy and its institutional and social paraphernalia. Depending on their position in this sugarcane economy, the farmers share different power equations with the field officers and these in turn define the nature of regulation in the Jahot system.

7.1 Setting the context: profile of the region

The Jahot river forms the boundary between two important districts of Western Maharashtra, Pune and Ahmadnagar. Several government reports have characterised this eastern part of the Pune and Ahmadnagar district as chronically famine affected, with scanty rainfall and erratic distribution of rainfall (Indian Irrigation Commission, 1903c; Beale, 1909; Government of Maharashtra, 2006b). Following the Indian Irrigation Commission Report (1901-1903), the government surveys recommended the possibility of a reservoir system in this region on a protective basis (Beale, 1909). However, the Jahot project was only constructed after independence, and was completed in 1965. This study is based on the Left Bank Canal (LBC) of the Jahot system, which is located in the district of Ahmadnagar.

The Jahot canal system covers the three *talukas* of Shirur (Pune), Shrigonda and Karjat (Ahmadnagar). The right bank of the canal system flows through the

Shirur *taluka* in Pune and the left bank, running to 84 kms, is covered by Shrigonda and Karjat *talukas* in Ahmadnagar. The command area of the Jahot system also intersects with the command area of the adjoining Ryat canal system, and at several places on the LBC, especially in the middle and tail regions, farmers are beneficiaries of both canal systems.

Topographically, Ahmadnagar has quite a varied profile due to its size and location adjoining the crest of the Sahyadris hill range. The district as a whole is an elevated tableland and can be divided into three parts: the Sahyadris hill range in the north; the plateaus of Akola, Ahmadnagar and Jamkhed; and the basins of Bhima river[100] in the south and the Pravara and Mula basin in the north (see figure 7.1). The drainage of the district belongs to two major river systems: Godavari in the North and Bhima in the South. The southern portion of the district lies in the Bhima basin (Government of India, 1995).

The distribution of rainfall in the district is fairly uneven. Most of the district lies in the rain shadow to the east of the Sahyadris. The major proportion of the annual rainfall falls during the south-west monsoons, September being the rainiest month. Near the hill range that runs south-east down the centre of Shrigonda and Karjat, primarily the area now irrigated by the Jahot system, the land is very poor with occasional patches of good light soil near Karjat and other places (ibid). The soil can give good results with an assured water supply, making canal irrigation important in these parts of the district (Government of Maharashtra, 2006b).

The region has thrived on canal irrigation since it was introduced in the 1960s. This is also responsible for the spread of sugarcane as a major cash crop (see Chapter 5). In recent times, however, canal irrigation has become supplementary to other sources such as lifts[101] and groundwater.

[100] The Bhima river passes through the boundary between Ahmadnagar and Pune. It rises close to Bhimashankar in Pune, enters Ahmadnagar district near the village of Sangavi Dumale in Shrigonda and flows south east. Jahot and Sina are two chief tributaries to the Bhima river. (Government of India, 1995).

[101] A system of lifting water (through motor pumps) from other sources of water such as river, canals etc.

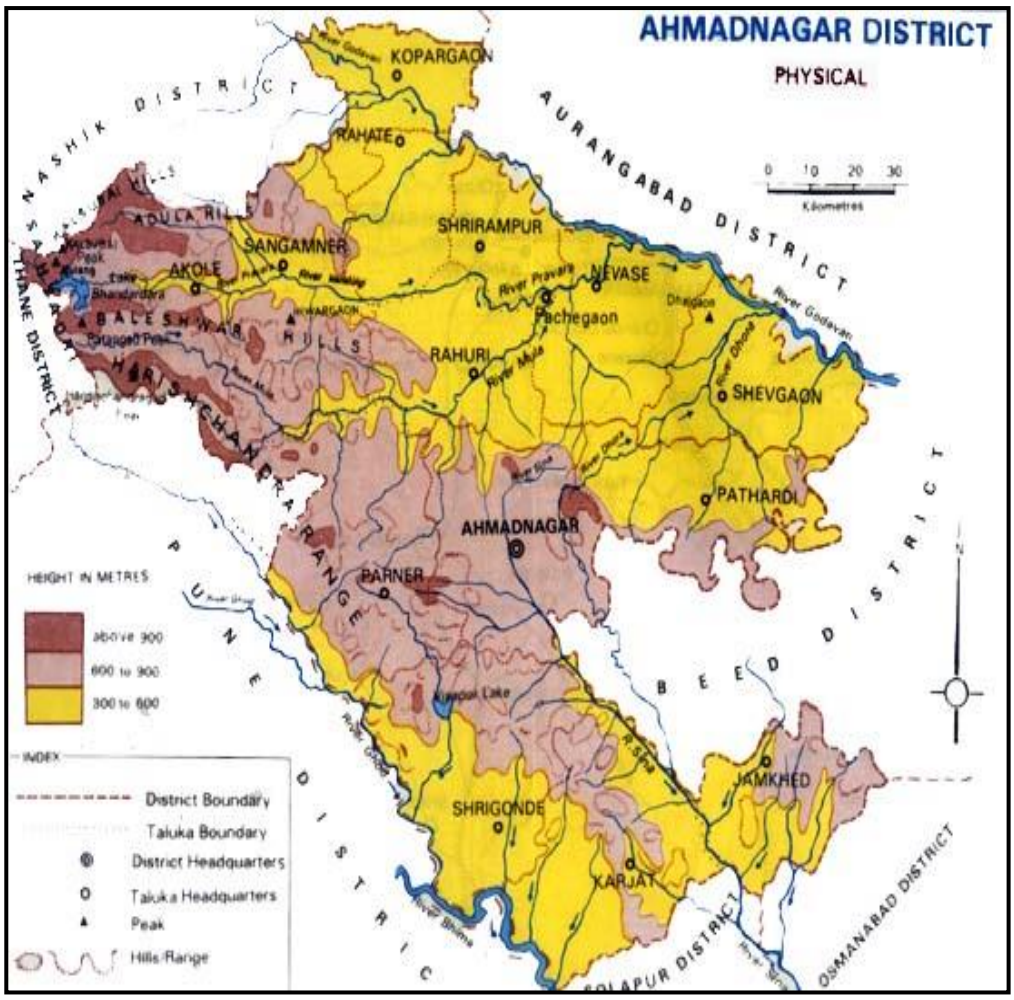

Figure 7.1: **The Bhima basin outlining the Jahot canal system**
(Source: Government of Maharashtra)[102]

The main crops in this region are sugarcane (*ganna*), sorghum (*jowar*), onions (*kanda*), sweet sorghum (*kadval*), wheat (*gahu*) grams, (*harbhara*), grapes (*draksh*) and lemon (*nimbu*). Jahot is a twelve monthly or perennial project with an initial capacity of 4 to 6 planned rotations of water, subject to availability. The non–irrigation uses include sugar cooperative factories, industrial units and various local municipal bodies[103]. Other reservations on water can be authorised by the district magistrate during periods of 'scarcity'. No major renovation or maintenance having been carried out since the project completion in 1965, this project was taken under the Maharashtra Water Sector Improvement Project (MWSIP) in order to rehabilitate the dam and its distribution system (Government of Maharashtra, 2006b). The Jahot canal system was one of the first

[102] http://ahmednagar.nic.in/gazetteer/ahmadnagarn.html (Accessed 13/08/13).
[103] For a detailed list of non-irrigation users, please see the Appendix 11.5.

projects to be taken within the pilot programme for entitlements under the MWSIP in 2006.

It is interesting to see that most of the MWSIP pilots were located in the politically prosperous belt of Western Maharashtra[104]. The senior officials involved with the project preparation provided two sets of rationale for this selection. One, that the basic criterion for the selection of projects was whether the context of these areas was conducive. Since Western Maharashtra has a background of cooperative movement, it provided a germane ground to test the ideas of collective action in the water sector (KI26). Therefore analogies were drawn between the new water cooperatives and the other cooperative networks[105]. Two, since the Bank had set the criterion of not financing any new projects under the MWSIP (KI02), old projects which were in need of rehabilitation were chosen, such as Jahot. By imposing this condition, the Bank had also played to the engineering bias towards works and structures. The MWSIP was already interpreted as a rehabilitation project and displayed the underlying professional bias of civil engineers with works, structures and gates (cf. Chambers, 1988). This became apparent in my visits across Maharashtra where the Department officials wanted me to inspect the canal lining and various structures for water conveyance. According to these officers, these structures were central to reforming the water system and for increasing the system's efficiency (KI26, KI20, KI21 KI26, KI28 and KI84).

The project selections, which were concentrated in Western Maharashtra, also displayed a certain degree of political bias. Highlighting the inherent bias, a a member from Prayas described it as a "marriage of convenience" and argued:

> Reforms happen in those areas where there are convenient players who might not resist issues. The MWRRA handpicked those sites where results could be shown, or where results could be shown on paper. WUAs will get money to show those results where WUAs will compete to gain subsidies and be very successful (KI07).

[104] MWRRA introduced the entitlement programme in six projects in the first phase, 2006-2007. These included Jahot, Kukadi, Mangi, Diwale and Benikre located in Western, South Western and Southern Maharashtra.

[105] For the relevance of cooperatives for building and strengthening water systems, also see Meinzen –Dick et al. (2000).

Both Mosse (2005) and Baviskar (2004) also make similar observations in their studies on decentralised resource management projects in India. They show how 'success' can be manufactured through the choice of projects, where parameters for selection are often guided by administrative expediency to demonstrate success rather than the ecological necessity of resource use. In Jahot however, the field officers were quick to deny any such bias and insisted that Jahot was an old project that needed rehabilitation. Though I could not establish the veracity of direct political involvement, the first few days at the Jahot system brought to the fore the distinct socio-political apparatus which cuts across the water distribution system in intrinsic ways. I now turn to this political constellation in the Jahot system.

7.1.1 *Raajkaran* (politics): the political demography of Jahot system

Before I entered Jahot, several officials in Mumbai warned me that I would find a lot of politics in this place and that it was a 'problem site'. Many of them encouraged me to take the adjoining site of Ryat where there was 'less politics'. I struggled to understand those dangerous aspects of politics that these officials referred to. For the officers, politics meant party politics; for the farmers, it meant the nexus between the Department, sugarcane factories and large landholders in the head of the system; as for me, any questions on shortcomings met with the opaque phrase, '*paani par raajkaran'* (politics on water).

"Where there is sugarcane, there will be politics, madam", remarked the car driver as he took me around the canal system. As mentioned earlier, the Jahot system traversed two *talukas* of Shrigonda and Karjat on the left bank . The location of this system shows an unusual criss-cross of state and local politics, where the large villages located in the head system, Pimpegaon and Viladri, are strongly divided across political factions and party lines. The ruling coalition partners in the state, i.e. the Congress Party and the National Congress Party (NCP), compete against each other in the local Panchayat elections. This is further complicated by two political stalwarts. Mr. Bajirao and Mr. Navade, who dominate the political scene in the head reach of the canal with their political bases in Pimpegaon and Viladri respectively. The sitting NCP Member of Legislative Assembly (MLA) and also a Minister in the state Cabinet, Mr Bajirao is the *paalak mantri* (guardian minister) of Shrigonda. He owns the sugar factory in Pimpegaon. The Navades, from the

Congress, are the prosperous sugarcane farmers of Viladri, controlling the *gram* and *zilla* (district) *panchayats*. For them, the WUAs are another source of political capital whose membership is dominated by the Navades and their extended family. I met Mr. Navade at the Viladri *gram panchayat* office during my first few weeks of fieldwork in Jahot. A civil engineer, Mr. Navade also worked as a contractor in Pune. In my first meeting with him, I was introduced to the political clout that his family enjoyed in the area. He told me that his family members headed different local institutions in Shrigonda and these included the Viladri sugar cooperative factory and the local *gram panchayat*. He drew clear analogies between the sugar cooperatives and the WUAs and said that they should be run on the same principles:

> We will have full control over water and we should get our water. As our sugar cooperatives work, we will also work like that in water cooperatives (KI51).

This positive analogy was only limited to a few politically powerful farmers – such as Mr. Navade - who saw the WUAs as source of power[106], and where irrigation could actually "free ride" (Mearns, 1996: 303) on other institutional forms of cooperation. During the course of my fieldwork I met several such farmers who did not feel the same way. I met a primary school teacher in Uzalgaon, who owned land in the tail end of the Jahot system. A WUA sceptic, he compared the new WUAs to those sugar cooperatives which were closed down due to charges of corruption. Though the analogy developed a shared understanding about the new institution (cf. Douglas, 1986), its legitimacy was limited due to the failure of cooperatives in recent times[107].

For Mr. Vishwasrao who owned twelve acres of land in the head of the system, these WUAs only meant transfer of power from the *shaasan* to the *bade log* (rich and powerful people). As he showed me around in his field where he planted lemongrass, broccoli and thyme to sell to the continental restaurants in Pune, he also told me that these big people might not listen to the tail-end farmers. Similarly Mr. Nitin Navade, a tail-end farmer in Viladri also made a similar observation. I

[106] Mosse (2003) also makes a similar observation in his study on decentralised irrigation management in South India.

[107] In recent years the cooperative movement has been on the decline in these parts of Maharashtra. Several cooperatively owned sugar factories were closed down due to charges of embezzlement of funds and corruption. Some of them have been revived through privatisation. Some ministers in the state government have also taken over these factories as private owners.

met Mr. Nitin in the office of the cooperative bank in Viladri. To gain familiarity and access and delink myself as the representative of the Department, I spent the first few days in here talking to the farmers. I mostly got introduced to the rich and powerful farmers there, and then by some stroke of luck met Mr. Nitin Navade. Very reserved, he chose his words extremely carefully, and told me that it was difficult to get water from the big landholders in Viladri. Despite this unequal power dynamics, there was little that small farmers such as Mr. Nitin Navade could do. He categorically mentioned that any action or complaint would mean a boycott from the sugar cooperative system.

-

-

Figure 7.2: In the fields of Mr. Vishwasrao
(The Jahot system, February 2012)

Sugar cooperatives form an intrinsic part of the social fabric of the Jahot system. There are five sugar factories that cater to and depend on the Jahot system. These sugar factories were the products of a cooperative movement that swept across Maharashtra from 1960s onwards (see Chapter 5). They are either privately owned or *sahkar* (cooperatives). Notwithstanding the pattern of ownership, it is through them that the politics of the region - including water politics - is articulated. As a cooperative, they are owned either by the local politicians or privately by ministers in the government. The WUA, in proximity to a *sakarkarkhana* (sugar factory) can rarely face water scarcity! This is the sacred belief of the farmers who dominate

the head-end WUAs of Pimpegaon and Viladari and a symbol of hope for people in Uzalgaon in the tail, where the deputy chief minister has taken over a closed cooperative factory.

While Shrigonda *taluka* located in the head of the region enjoys political prominence, Karjat *taluka* receives step-motherly treatment as it is ruled by the opposition party[108] and also has a smaller command area, compared to the Shrigonda *taluka*, under the Jahot system. Nevertheless the political criss-crosses and overlaps remained very alive in Karjat, which benefits from the two canal systems of Ryat and Jahot. In a politically fractious context, the local farmers are able to use political leverage to derive benefits, which also includes getting water. While the head-end farmers are the political heavyweights of the region, the tail end or small farmers use their political links to 'demand water'. Mr. Mudrik, a local leader of the NCP, who owns land in the tail of the Jahot command, told me that he often called up Mr. Bajirao or even the deputy Chief Minister when there was delay in releasing water for rotations[109].

A second entry point for exercising this political leverage is the Canal Advisory Committee. This Committee is an executive group comprising the officials from the Irrigation Department in charge of the canal, and the political representatives (MLAs) of the three *talukas*, Shirur, Shrigonda and Karjat. Though it decides the date and time of rotations, its de facto mandate extends well beyond its advisory role. The dates and time of rotations are often politically manoeuvred. For instance, several farmers recounted the 2011 November-December rotation as *paani par raajkaaran* (politics over water). When the water had just been released in the tail, it was diverted to a sugar factory in the head at midnight. Mr. Navade recalled:

> We usually get the rotation at end of December or early January, but they needed water to start the sugar factory. None of us wanted water then, but because they wanted water to start the factory and fill their tanks, it was released in November. I can guarantee now that we will have problems in our summer rotations (KI51).

[108] Maharashtra, as a state is ruled by a coalition of NCP and Congress at the state level and BJP and Shivsena are the opposition parties in the Legislative Assembly.

[109] Mollinga (2003) also refers to such political brokering in the water distribution system in Southern India.

This was the latest of the many episodes of contestation when I arrived at the Jahot system. With the Panchayat office in the centre, the cooperative bank towards one side, a cooperative sugar factory aligned to the boundary wall and the canal system a few kilometres away, this physical layout in many ways illustrates the axes of politics of the Jahot system (Field Journal, February 2012). The cooperatives which function as multipurpose organisations – banks, *bachat ghats* (saving groups) and political platforms for panchayat election – are the fulcrum of social and political organisation in the Jahot system and resistance is shaped alongside the membership of these cooperatives. Defections can be punished by denying the farmer access to sugarcane processing (cf. Rosenthal, 1974; Baviskar, 1980; Sathe, 1986; DeSouza, 2010).

In the Jahot system, water and cooperatives are closely aligned in a peculiar system of collection of water charges. The water charges are collected through these *sakarkharkanas* and not individually from the farmers. These factories maintain the accounts for farmers who bring in their sugarcane to be processed here. The Department deducts the money, as part of water charges, from these accounts. This norm, which is now a standard practice, has blurred the boundaries of accountability and responsibility in the Jahot system. The Department maintains that this system ensures steady collection and checks evasion of payments. The farmers complain that they often pay for the water that they never receive. The farmers, especially in the head system, pay their bills through the sugar factories. In the tail section, the system of cash-in-hand payment exists parallel to the sugar factory system.

Rents from irrigation services and the underlying corruption have been the central focus of a vast literature on irrigation management (see Wade, 1982; Repetto, 1986; Moore, 1989). This body of work has also been used to justify incentives and mechanisms of transparency and accountability which will act as checks for these rents. However these practices may also thrive on certain complex, contingent and overlapping institutional systems, which make collection of water charges an opaque exercise. In some ways this practice also raises questions about issues of cost recovery. In the current discourse of regulation, low cost recovery and financial incentives are the key reasons provided for the restructuring of the water sector (as discussed in Chapters 4 and 6). However, in Jahot, sections

officers took particular pride in telling me that they have had 100 percent recovery in their jurisdictions since the money is deducted from the accounts at the cooperative (KI43, KI46). This also shows how overlapping and nebulous systems which ensure full recovery might not necessarily translate into well maintained systems and accountability in water distribution. It became extremely difficult to understand and trace the practices of collection of charges because these practices have evolved socially as part of the social and historical landscape of the Jahot system. The jurisdictions of the cooperatives are neatly aligned with the administrative jurisdictions of the Jahot system itself.

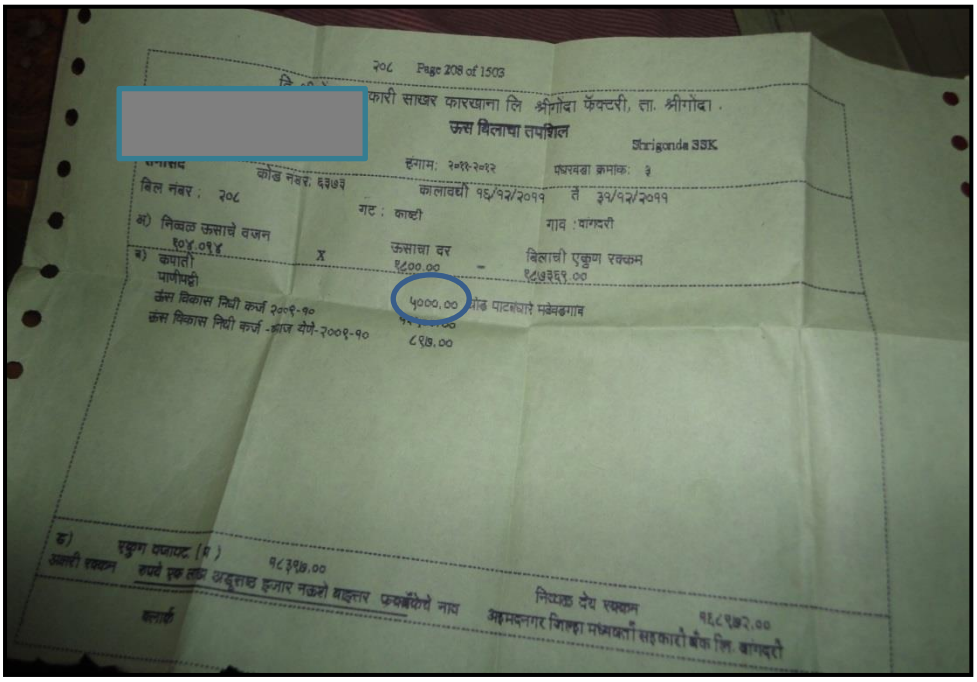

Figure 7.3: The bill from the sugar factory showing the water levy
(February 2012)

Figure 7.4: On the way to the sugar factory
(March 2012)

Figure 7.5: **A sugar factory in Shrigonda taluka**
(April 2012)

7.1.2 *Shaasan* (Department) in Water: administrative jurisdiction in the Jahot LBC

The Jahot Left Bank Canal system is divided into 5 sections: Zorebali, Viladri and Pimpegaon form the head of the system, Vinaygaon the middle and Uzalgaon the tail. It is a reservoir-based annual system running from 15th October until the

June of the following year. The LBC has a carrying capacity of 14.15 cumecs (cubic metres per second), with a Gross Command Area of 39,040 hectares and a Culturable Command Area (CCA) of 30,293 hectares[110].

In its early years, i.e. the 1960s onwards, the Jahot system had the capacity to afford almost 8 rotations, but with time and dilapidation of the dam and canal, complemented by the emergence of other dam systems above Jahot, such as Ryat, the water capacity of Jahot has decreased (KI41). The water cycle begins on 15th October after the monsoons have receded and goes up to May. There are three crop seasons in the Jahot system: *Rabi* (October to February); Hot Weather/*Unhaal* (March to June); and *Kharif* (July to September). The *kharif* crop is mainly sustained on the monsoon rains (KI40). The water calendar and rotation preparation are determined on the basis of the available water in the dam with a minimum of two rotations planned for any season. These rotations last for over 15-20 days, with a gap of at least 20 to as much as 45 days between any two rotations (KI40).

In Jahot, in a normal year, the rotations are generally planned for the months of late November/ December, and the end of January, March and May. The officials explained to me that the first rotation can be delayed if they have a good rainfall as farmers benefit from water recharge either through wells or through the overflow from the dams above Jahot[111]. The dates of water rotation are decided by the Canal Advisory Committee (KI40, KI41, KI42). The general public usually receives information by word of mouth, through meetings or through newspapers and submits demand for water accordingly. Once the farmers are aware of the general dates of water rotation they are required to fill a form called Form No. 7. This demand form, as it is generally referred to, provides details of the crop to be irrigated[112]. This helps the Department in calculating the demand for water, and in planning the quantity and hours of water rotation accordingly. Once the water is received by the farmer, the *patkari* (Canal Inspector (CI)) goes around the fields recording the areas/crops which have been irrigated and

[110] Information received from the MWSIP Section office (Shrigonda. Ahmadnagar).
[111] Water released into the canals once the dams are full.
[112] Information collected through several interviews with the field officers.

prepares the bill for the individual farmers. This is the crop-area method of water assessment.

This system of water distribution also affords an extensive reach and mandate to the field bureaucracy. The CI, or *bhau sahib* as he is called in the Jahot system, is the gateway to the *shaasan* as he provides the information regarding the date, time and duration of rotation. The CI is not merely the representative of the government: he is also part of the social fabric of water distribution. He goes house-to-house to collect water charges and, at times, signatures on official documents. While farmers are suspicious of his underhand dealings, he also enjoys a status of prominence among them. In Jahot, he is the first point of contact for understanding the process of reforms as the questions on canal ownership, water losses and bills are mostly directed to him (Field Journal, March 2012). When I asked Mr. Ginoji, an elderly man and the former chairman of a tail-end WUA, about how he received information regarding the current changes in the canal system, he replied:

> Whom are we going to ask? The local *patkari*, we cannot go above him. At the most we can make the effort to go the head office in Vadgaon but the local *patkari g*ives us the information. He is the *shaasan* (KI85).

The entitlement system that was introduced in Jahot from 2007 onwards aimed to alter this relationship. As already explained in the previous chapter, entitlements seek to restructure the mandate of the *shaasan* to that of a service provider, to make consumers out of the WUAs and to finesse this relationship with accountability, transparency and predictability. Once the system was handed over to the WUAs in 2010-2011, a Memorandum of Understanding (MoU) was signed between the Department and the WUA, represented by the Chairman. This MoU outlined the division of the roles and responsibilities of the Department and the WUA respectively. It also mentioned the sanctioned entitlement of the WUA. With this, the Department now moved from being a "retailer of water" to a "wholesaler of water" (Uphoff, 2000: 28), making entitlements the pivot for this altered relationship.

These entitlements are calculated and enforced by the MWRRA in Mumbai and are to be monitored by the local regulator who is put in place to verify the

delivery of these entitlements to the WUAs. This system should, in line with the reformist thinking, remedy the previous system riddled with corruption of the *patkari*, politics and un-scientific water supply, which caricatured the state-led water apparatus. This is the rationale vigorously supported by the key actors from the World Bank and the irrigation bureaucracy in Mumbai and Delhi. But what did entitlements mean to the field-level officers in the Jahot system?

Entitlements entered the vocabulary of reforms in Jahot in 2007. Initially 10 WUAs were chosen for pilot schemes on entitlements. These were mainly located in the head regions of the canal. For Ms. Seema Kulkarni from SOPPECOM, who worked on the Jahot system training female members of the WUA, there was an inherent bias in this selection. She argued that the WUAs in the head regions were chosen for the initial experiment because it was easier to gain constituency among the big landholders and also "show results" in this region (KI11). These WUAs covered the head sections of Pimpegaon, Viladri and Zorebali and thus were also the first ones to receive the rehabilitation package in order to pilot entitlements.

Mr. Balasaheb from Pimpegaon stopped over to talk to me as he was driving down the canal roads in one of the head WUAs. I asked him if he saw any changes with the new system and he replied that he did because the "water now came with full force" (KI109). This meant that big landholders, who had been receiving water under the previous system, still received water but through a system with better conveying capacity. By 2009/10, however, the entitlements did move downwards into the system. They were rolled out to all 55 WUAs of the Jahot system.

7.2 *Hakkache Paani* (Entitlements): the official discourse on entitlements

In the first few days of my stay at Shrigonda, I tried to understand what the field bureaucracy thought about entitlements. I started with a senior official, Mr. Parekh, who was the Engineer in charge of the Jahot system. Described as an honest and upright man throughout the course of my fieldwork, Mr.Parekh

genuinely believed that these reforms are a "step forward" in irrigation management. As for entitlements, he explained:

> This is going one step forward. When some quota is fixed for the irrigator, he is totally aware about the percentage of his quota. Today, we call applications from the farmers and sometimes he may not fill that form no.7, and he may not put in his demand. But once the quota is given to him, it is compulsory for the WUA to give the water quota to the farmers. Each farmer must get water. This is the concept of *samanvay vaatap* (equity in distribution). It is the farmer's right to get water as per the area (KI40).

Mr. Parekh's description of entitlement as quota alerted me to the constant blurring of these two concepts in the field. This new system was seen as replacing the old system of application-based demand system. It also did away with the bureaucracy of forms between the Department and the farmers by ensuring that entitlements would be delivered even if not demanded. The 'quotas' were calculated according to the principle that every landholder in the command was entitled to water on the basis of the area of land s/he owned within the command. This meant that every acre of command land had a fixed quota of water. But the distribution of these quotas to individual farmers was the 'compulsory' responsibility of the WUAs concerned. Mr. Parekh explained this division of roles as follows:

> The WUAs distribute water on an area basis and not on a volumetric basis, because the farmer cannot measure water at every property. The WUA collects the water charges according to the crop but the Department does not collect charges on area basis. We collect charges on a volumetric basis as water is delivered on this basis. This water is cheaper than the area-based water (KI40).

These entitlements created two separate systems of water charges: one, from the Department to the WUA who are the bulk consumers of water, and two, from the WUA as a bulk supplier to individual farmers. The WUA distributed water on an individual basis but this distribution was carried out on the basis on the old pattern of area-wise calculation. For Mr. Parekh, it was the volumetric pricing of water that was at the heart of the entitlement system. Advocacy for volumetric pricing is in line with the reformist thinking on water use efficiency that payment for the actual quantity of measured water will influence farmers' decisions on the quantity of water they use (Mollinga, 2000), since they will plan the crop as per the availability of water or the sanctioned quota. This therefore meant that farmers who benefited from the under-pricing of water and grew sugarcane might

then need to shift to other, water-efficient crops or methods in face of water rationing.

To understand the nuances of these calculations and distribution, I was then directed to the officer concerned, Mr. Sayaji, who oversaw the progress of entitlements in the Jahot system. When I met Mr. Sayaji, he explained that his job was limited to calculation of entitlements, which are calculated every year and also by season. In Chapter 6, I already mentioned that entitlements are divided into different categories and sub-categories of sanctioned and applicable entitlements. The sanctioned water entitlement means the quantity of water that will be delivered to the WUA in any normal year when the dam is full. Mr. Sayaji explained that over the past few years this had rarely been the case in the Jahot system. Therefore it was the applicable entitlement which determined the water rotations and distribution in the canal system. Applicable entitlement is calculated on the basis of water available in that particular year. It was usually less than the sanctioned entitlement as agreed in the MoU as it depended on the rainfall received in the dam's catchment and the quantity of water available. While sanctioned entitlements are decided on the basis of cropping season, water for each rotation is called the quota.

Quotas, therefore, are a subset of entitlements and can be adjusted as per water availability in each season. Mr. Sayaji, like Mr. Parekh, was certain that this system provided for more 'accuracy' in the distribution of water from the Department to the WUA. He also explained the method of calculation, through equations and deductions in entitlements which are calculated as per the MWRRA guidelines[113]:

> We deduct the quantity of silt, government sanctioned lifts, deductions for industrial and domestic quota, sanctions of the district magistrate, the lifts on backwater, the KT weirs on Jahot River. After all these deductions, the net water that remains is divided by the total CCA of the canal. Next, we also deduct the transmission losses and then calculate the water left at the head of the WUA by the total CCA of the WUA. This becomes the entitlement of that particular WUA and we estimate that quantity per hectare (KI41).

$$\text{Entitlement of the WUA} = \frac{\text{Total water available at the head of the canal}}{\text{CCA of the WUA}}$$

[113] See Appendix 11.6 for an illustrative example of calculation of entitlements.

Entitlements are thus calculated on the residual water which is divided by the total CCA of the canal, which is further divided by the CCA of each WUA to calculate their bulk water entitlement. As far as the 'mathematics' of the entitlements were concerned, the digits and the numbers were imputed and several Excel spreadsheets were produced to reaffirm the delivery of the entitlements. However, this technical understanding also played on some inherent biases in water prioritisation. Following the 2011 Amendment and in the face of resistance from farmers and civil society organisations, the government had overturned sectoral priorities to give preference to agriculture over industry (Chapter 6). However, at the local level, the entitlements gave precedence to non-irrigation uses of water over agricultural water needs. It is only once the non-irrigation water is secured that entitlements are calculated for agricultural water. Thus the change in allocation priorities, under which non-irrigation were still privileged at the specific project level, become just an "eye wash", explained the MWRRA official (KI21).

These quotas guarantee water to WUAs and also give them freedom of cropping because once the farmers are assured of the supply of water, they can plan their crops accordingly. As Mr. Sayaji explained:

> The members of WUA have the right to water; we have to give them the x amount of water mentioned in the MoU. Through this system, people are going to get surety of water. Once we have planned for the water, we tell the WUAs about how much water is going to be allocated to them and how many rotations have been planned. The WUA therefore will have freedom of cropping. They can decide about the crop they want to grow. We will give them x quantity of water and we apply the same formula head to tail. They are going to get water as per the entitlement (KI41).

The entitlements are not given on individual basis, so in order to receive water, the farmer needs to be a member of the WUA. The MMISF Act also made this participation compulsory and automatic. Every farmer in the command is automatically registered as a member of the WUA. Besides freedom of cropping due to surety of water supply (KI41, KI20, KI24, KI26, KI40, KI41), the entitlements also ensured a degree of uniformity as the same formula was applied from head to tail. However this uniformity did not factor in the systemic biases of the irrigation system and the capacity of the farmers to demand and capture water (I discuss this later in this chapter).

Entitlements defined the relationship between the Department and the WUA, whereas the language of quota was retained for farmers, which ensured that water rights might not necessarily translate into each farmer securing rights to water. When I asked Mr. Pomane, another section officer in charge of the head region, about entitlements, and if he thought these were rights for the farmers, he was perplexed and said that these were quotas, which the Department gives to the WUAs, also called *manjoor quota* (sanctioned quota). Entitlements, for the bureaucracy, meant delivering the calculated quota to the WUA on the basis of volume of water. To the field-level inspectors and section officers, this translation of quotas to entitlements and vice versa did not indicate any fundamental change. It prioritised calculations with accuracy in delivering water and demarcated their responsibility and jurisdiction upto the WUA. Quotas also became the essential vernacular of entitlements, and these were beginning to dilute the rights-based core of entitlements. Moreover, as I have shown, the way entitlements are defined and calculated is intensely technical and wrapped in the language of volumetric pricing.

Mr. Sayaji calculated entitlements for the WUAs and informed the section officers, who were to make sure that water was allocated as per the quota and were required to present the bills calculated in volumetric terms. This report was then filed with the MWRRA in Mumbai. For the field-level officers, entitlements also created a division of accountability upwards. Since the MMISFA and MWRRAA formed a part of the MWSIP package, the implementation of these two Acts rested with the Department and the MWRRA respectively. But at the project level the accountability was merged into the same officers. Mr. Sayaji explained:

> We have the Authority as per the law, which has the right to plan and make rules for water delivery. What does the Act say? It says water would be delivered to the areas where WUAs are formed; this is compulsory and water would be delivered only after the formation of the WUAs (KI41).

The rules for water delivery which are the entitlements make formation of WUAs critical for the success of entitlements. They are the bulk water consumers in the new entitlement regime. The official discourse, so far, had hinged on the belief that the surety of water supply ensures equity in water distribution, and provides

freedom of cropping but this equation was not an easy one to balance in the Jahot system. Moreover this limited understanding of entitlements was based on certain presumptions.

Programmes of improvement are often shaped by what they exclude and how they are constituted (Li, 2007). Likewise in Jahot, the framing of entitlements as quotas limited the reach of the language of *hakkadari* i.e. right or title (cf. Upadhyaya, 2005). Moreover to translate quotas into practice, several assumptions were made: that the irrigator was aware of the quota of the water to be received; that water through entitlements was cheaper than water received through the previous system; the system to deliver entitlements was in place and that WUAs would be responsible for ensuring that every irrigator got his/her quota of water. In the following sections, I show how these assumptions are misplaced and mask the reality of the entrenched power systems in Jahot.

7.3 Translating entitlements: prerogatives, presumptions and power

Once the Jahot project was taken under the aegis of the MWSIP project in 2007, the work on rehabilitation, formation of WUAs and the delineation[114] started simultaneously[115]. The tasks were categorised into Priority I and Priority II. Priority I included mandatory works of construction and Priority II were supplementary works. The field officers also resorted to the "rule of the thumb as they extended their method and preferred approach with decided emphasis on construction and rehabilitation" (Chambers 1988). In several interviews with the

[114] Delineation refers to the drawing of the command area. The command was delineated for the first time when the Jahot project was planned in the 1950s. The new delineation would update, extend or remove areas on the basis of present use. Also, as per the 2005 Act, this delineation was to be done in line with the needs and the demands of the farmers.

[115] The command area of the project was delineated in order to form the WUAs. The WUAs with CCA less than 500 hectares were entitled to have 9 directors and those with above 500 hectares would have 12 directors. The directors were chosen through elections convened after the WUAs had been formed. The Act made it mandatory that the committee members would represent the head, middle and tail sections of the WUA. The MMISF Act and Rules also provided for the mandatory election of at least one woman in the managing committee of the WUA. This WUA would then be divided into several sub-committees to oversee the process of rehabilitation, water distribution and collection, agriculture and cropping patterns. These committees were to be in place to ensure the delineation/rehabilitation process is participatory and includes the response of the irrigators. While the WUAs were formed at the minor levels, it was envisaged that they would be complemented with the formation of Distributary Level Associations (DLA) and then Project Level Associations (PLA). The PLAs would eventually take over the canal system and water distribution (Government of Maharashtra, 2005a).

irrigation bureaucracy, I was often told about the 'works' and how structures are fundamental to reform (cf. Mollinga 1999). Partly this is also due to the fact that MWSIP is considered, designed and understood to be more of a rehabilitation project than a reform project. When I visited Jahot for the first time, I was directed towards structures, gates and gauges since the officials were under the impression that I might be on inspection. Infallibly the success of reforms was always defined in terms of "irrigation works" and failures in the language of "farmers' incompetence" and slow uptake of reforms (Field Journal, March 2012). Alongside this process of rehabilitation, the WUAs were also to be formed, simultaneously. The MWSIP stipulated the condition that-

> WUAs at minor level should be formed by no later than June 30, 2006 in all irrigation schemes covered under the project; Distributary Level Associations and Canal Level Associations by no later than June 30, 2007, and DLAs, CLAs and PLAs by no later than June 30, 2008 in all schemes covered under the project (World Bank, 2005: vii)

The progress of reforms and completion of targets thus became a mission of the field bureaucracy, who were continuously under pressure to show results. Shah (2000) makes a similar observation on the role of the field officers in irrigation reforms in India. He notes that these officials are "subjected to a monitoring and rewarding system that rewards them only in terms of physical and financial achievements (Shah, 2000: 157). In Jahot, reporting also had a greater emphasis on the 'hardware' component and focused on rehabilitation and building of outlets and gates.[116]

However some of the field officials did register their disdain for the process where they had to show outcomes in a limited period of six or seven years (KI42, KI41). Once the rehabilitation was complete, the system was to be handed over to the WUA. The WUAs thus became bulk water consumers, the Department the service provider, and the regulator the monitor of the standard and quantity of water received. Within a period of two years 55 WUAs were formed in the Jahot system. The social element of the project was assigned to the NGO, Pune-based Prerna, which was made responsible for raising awareness among the WUA members, 'educating' them on their roles and responsibilities, informing them about the benefits of the MMISF Act and collecting contributions. However, this

[116] Observation made through reading progress reports with the PPMU, Mumbai and interviews with project consultants for monitoring the progress of reforms (KI19).

NGO only entered the scene of action in 2009 when the lowest-level systems were ready to be handed over to the farmers[117].

In Jahot, handing over was carried out in a phased manner, and between 2009 and 2011, the minor systems were handed over to the respective WUAs. Handing over marked the jurisdictions of control and accountability regarding the distribution of water between the Department and the WUAs. It was the verification of the fact that the system was in a fit condition to be given to the WUAs to manage it. This required the WUA and the Department to enter into a contract defining the division of roles and responsibilities between the two actors. After the handing over was complete, the WUAs were required to take up water distribution and also the maintenance of the canal system. Handing over was also the point when government via the Department became the government of the community as WUAs took over the distribution of water. Thus entitlements sought to change the *mai-baap* (patron-client) relationship into a service based relationship whereby farmers would be consumers of water.

7.3.1 Making consumers and communities: the ritual of handing over

The 2005 Act underlined the function of the NGO to initiate capacity building, to 'nurture' the farmers into the roles of consumers and to prepare and train them for water distribution (KI48). However, in the Jahot system, Prerna was included in the process only in 2009, when WUAs had already been established, delineation completed and handing over was in process. Prerna complained that it was difficult to coordinate activities as their role as capacity builders was reduced to mere collectors of contributions from farmers. Also, since the WUAs had already been established in a particular way to meet certain targets, they found it difficult to reverse this process since "much of the damage had been done" (KI113).

Thus the formation of the WUAs from 2007 onwards was inevitably process guided under the auspices of the Bank experts (KI28) and the Department. Mr. Surve, officer-in-charge of the MWSIP in Mumbai, highlighted the central role of the Bank in the user formation. He mentioned:

[117] While the officials in Mumbai cited logistical reasons for the delay, the coordinators from Prerna hinted at certain problems with the tender. They also stated that they were unable to disclose any further details.

> The Bank officials also had meetings with the farmers, they told them about the positive aspects of water user committees. They told them about the importance of making contributions for the user committees. You will value it more if you contribute to the project, you will feel that it is your own project. If you do not contribute, you will not realise the value of the project (KI28).

In a distinct neoliberal sense, these communities of farmers, assumed to be homogenous, "were encouraged to take responsibility" (cf. Rose, 1999) and own their water. In order to create a sense of ownership among the farmers, the WUA members were required to make contributions in cash and in kind, which would create a responsibility among the farmers towards maintenance of the system[118] (KI41, KI42). Articulating participation and cooperation in terms of structures and incentives, this understanding reflected the 'apolitical' assumption, where farmers as rational agents determine rules of collective resource use to avoid the tragedy of the commons (cf.Wade, 1989; Ostrom, 1990). In this reorientation of the community, social power is assumed to be a level playing-field, providing equal opportunities for resource access and use, where economic incentives trump social inequalities. However, this apolitical and technical construction of the community is mediated through unequal access to power (Mehta et al., 1999; Cleaver, 2000; Mosse, 2003; Brara, 2007; DeSouza, 2010), where communities become sites of contestation between farmers and bureaucracy and between farmers themselves.

In Jahot, these meetings for mobilisation of farmers were held with influential farmers and mostly comprised the head end villages, which were the first ones to be chosen under the entitlement programme in 2007. Also, the level of information did not go beyond the influential people who were the big landholders. In Viladri, it was Mr. Navade that I would most often be directed to for meeting farmers and getting information on reforms. This influence was also evident in the first batch of WUA committee members who were put in place in 2007. Though the MMISF Act stipulated conditions for elections, these members who were the influential farmers were handpicked by the Department. Elections were shortchanged for the sum of 15,000 rupees, to be awarded for unanimous candidature. For field officers, this smoothed the way to target completion, which

[118] This would amount to 200 Indian Rupees (in cash) and 300 rupees (in kind); the 'in kind' contribution entailed clearing of the field channels, etc. (KI42).

otherwise could be riddled with obstacles and "headaches" in the event of elections. Mr. More, another section officer of the tail-end WUA, defended this decision and said:

> We tried to hold meetings but the farmers do not come. So we got in touch with people who have more influence in the village and who are better educated, so that they can handle it (KI42).

By making this provision for unanimous representation, the 2005 Act had severed the hopes of democracy and laid the system open to capture of power. However this bias in participation also meant information asymmetry. Very few farmers that I spoke to knew about the changes accruing in the Jahot system. Therefore my sources of information were limited to a handful of committee members, as other farmers did not know about these WUAs. In the tail of the Jahot system, this participation was further impeded by the geographical distance from the tail end villages to the head office where the farmers' meetings would often be conducted. These meetings were often held at the Vadgaon office which is located in the head region of the Jahot system. Sanjay *bhau* who now was the in-charge of a tail-end WUA told me that he never went to these meetings because he did not have the time to do so. These meetings often involved political costs of time and resources for the farmers (cf. Li, 2007). The Chairman of a tail-end WUA saw it as "waste of time and petrol to travel to the head office" (KI105). The Department officials however claimed:

> We have told them about the meeting but they do not come for the meeting. We organised big meetings, arranged for food, got loudspeakers but they are not showing interest. We do not know why. They are only interested in water and as long as they get it, their work is done (KI43).

This othering process and labelling of farmers as not interested or subjects without agency who could be 'lured' into 'participation with food' underlines how the socially and politically differentiated farmers were viewed by the Department. It also oversimplified the agency exercised by these active agents. This making of the community thus occurred in situated spaces which had their boundaries of inclusion and exclusion set. These were also most often demarcated by the Department. These labels also defined their capacity and agency to participate, and their entitlement to know and decide, as well as the aims and obligations of those who involved them (Cornwall, 2004).

The absence of the NGO, and complemented by the light-touch visits of the Bank led to the field bureaucracy remaining the chief purveyor and implementer of reforms in the canal site. This also drew them into the race for target completion as project targets were reduced to the quantified figures, inputs in logrolls and 'yes' and 'no' answers. The six monthly reviews sent to Mumbai and the World Bank verified the project progress on these grounds, which underlined a process of compression and prioritisation of the several objectives that were fundamental to rolling out of entitlements[119].

This process of target completion also led to the ritual of handing over. While the officials ensured that the system had been handed over to the WUAs (at the minor level) and that WUAs should start their distribution and maintenance of the system (KI40), the farmers, including some of the committee members, had no knowledge of this handing over. There was enormous confusion as to who was handling the responsibilities of delivery and distribution of water, and more so who was responsible for the collection of water charges. Mr. Navade from Viladri, who was usually quite well informed about the progress of reforms, was quite unaware of this progress, and summarised the essence of this process:

> Our WUA came into being in 2007-08; we assumed that the CI will come and give us water but then the Department had to use the funds of the World Bank, then the Bank put the burden of this condition of forming cooperatives and that is the reason that these people have done the paperwork. Before we could know, the societies were formed and then once everything was done, we were asked to sign so that funds could be taken. This is the reason for the lopsided work in Jahot […] Handing over is not done as of now, we are in the process of doing it. We have not started the collection either. I came to know only last time that we had to handle this rotation, and also do the collection. MoU has been signed and handover is done on paper but not in practice. Everyone sees things on paper because in order to do the actual work, they [officials] have to face us. They have a mindset that we will shout at them, abuse them and therefore they think it is better that we do not go there. They do not want to face us directly (KI51).

Mr. Navade's explanation made it clear that handing over of the system also meant greater control over funds. What is more important, however, was the way he perceived the relationship of big farmers such as himself with the Department. He mentioned several times that the Department is "scared of the farmers" but he is well informed about reforms because the "section officers gave him the details about reforms in good faith" (KI51). This also shows the relationship between the

[119] Observation made during an interview with the monitoring and evaluation team of the MWSIP.

Department and a certain section of (farmers) in the Jahot system who have helped in maintaining the façade of reforms. Baviskar (2004) makes a similar observation in her study on watershed management projects in Madhya Pradesh (India) where she argues that such people "become collaborators in the charade of decentralisation – even more so when they participate in corruption, help manufacture the charade of success and/or benefit economically from it"(Baviskar, 2004: 39).

The NGO Prerna, however, was not a collaborator to this maintenance of the façade. To the contrary, they were perplexed at the process of handing over and, as a mark of protest, declined to inform the farmers about entitlements since they were not convinced about the transparency of this process. For Prerna, entitlements are the last stage of the process and the "hardware" to implement the "software" of entitlements was not in place. The hardware issues related to the incomplete rehabilitation works. They argued that the Department had consciously subverted the information about entitlements because this might pose a threat to favouritism in the Department since entitlement would spread and distribute water across the command area, as opposed to the rich and loyalists. They were equally critical of the language of entitlements. Mr Raman, in- charge of the MWSIP project in Prerna said:

> We have told the *shaasan* unless you certify and give us the copy, we will not tell them (the WUA) that this is your entitlement. There is a general entitlement in the contract but they have to certify that this WUA has this much quota in this year. It is not a matter of producing figures in Excel spreadsheets…we have to make sure that the WUA knows it and gets the water (KI114).

One of the serious contentions over the ritual of handing over was the status of the rehabilitation and works. As Mr. Navade mentioned, the handing over was done on paper, but several WUAs complained of poor works that were affecting the distribution of the water. Thus it became difficult to gauge who would take up the responsibility of maintaining the system now as the delivery of entitlements was directly affected by the capacity of the system. But are rehabilitations need-based or are they fundamentally political decisions? What constituted rehabilitation, who decided on rehabilitation, and what the jurisdictions of rehabilitation were became politically contested lines in the Jahot canal system.

7.3.2 Unpacking rehabilitation: a continuing crisis

After a month at the Jahot system, and perplexed by its multiple versions of reforms, I finally discovered that the Jahot project is a disputed site. The work on the main canal was incomplete as there was some 'crisis' between the contractor responsible for repair works and the Department. The Department cited this as the reason for delay in results or any other problems that they encountered during rotations and water delivery[120]. When I pressed them further about handing over in the face of pending works and how entitlements could be delivered in such a situation, the officials were convinced that these works did not affect the distribution of entitlements.

The officials make a clear distinction between the main works and the field works, which pertain to the area beyond the outlet, and they claimed that the works are complete in all the WUAs and therefore the handing over was done. The officials, both in Mumbai and in Jahot, concurred that the Priority 1 works were complete and therefore entitlements could be delivered (KI28, KI23, and KI40). On the contrary, they argued that farmers want more work to be done, especially relating to field channels. The officer-in-charge, Mr. Parekh, remarked:

> They are expecting much more works. We prepared estimates first and then there was a walk-through-survey with the farmers. The works listed at that time have been completed but the farmers are expecting some more structures, some more crossings or outlets. It is their estimate, their tender, we cannot consider increasing the value of the tender (KI40).

The system rehabilitation that started soon after the project was selected was completed before the system was handed over to WUAs in 2010. However there were many areas where the quality of work was poor and the channels had nearly collapsed (Field Journal, March-May 2012). Due to the WUAs being inactive, the areas that were delineated for the repair works were decided by the *shaasan*. Esmail (1997), in his study on decentralisation and rural development, notes that though rehabilitation may provide a crucial incentive for farmers to take responsibility for water management, the WUAs need to actively contribute in this process, a key ingredient missing in Jahot.

[120] I was informed about this dispute when I asked questions about the delivery of water to the lower levels of the canal and also the relevance of handing over the system before completing rehabilitation. The immediate response was that canal has some problems. It is then that I learnt of the dispute which was regarding the work of the contractor and his payment.

The controversy now was over the repair works that were never carried out. The Department also maintained that entitlements were key to ensuring that the WUA got their water quota during the rotation but internal distribution is within neither the mandate of entitlements nor the accountability of the Department. Thus the dilapidation of works beyond the outlet was no longer their responsibility once the system was handed over to the WUAs. Mr. Parekh said:

> Yes, we have completed the work of the WUA. We have not accounted for the field channels. It has to be done by the WUAs. We have completed the works up to the distributary and the minor. After that it belongs to the jurisdiction of the WUAs. The WUAs say we want bridges here, line the canal here. Their demands are increasing. When we started to work, we formed the WUAs and a canal management committee was created with the WUA director. No one came forward at the time when the work started. Those who did come, we have done the work according to them. We had to make the payment to the contractor once the director had signed and was satisfied with the work. It is then that these questions should have been raised by them. They need to collect the money and do some development on their own (KI40).

The discussion on reforms and their progress usually focused on 'rehabilitation' and 'works' in the Jahot system. While the farmers complained of poor and incomplete works which made handing over a mere ceremony, the Department maintained that the system was in an appropriate condition to deliver water as per the entitlements because the field works beyond the outlet were complete. This also prepared the ground for a culture of blame within the Jahot system, whereby the *shaasan* and the farmers (big and marginal alike) resorted to blaming each other. Though these works had inherent problems, this contestation also highlighted the priority of entitlements, which were limited to the main system. In the official discourse, entitlements were pitched as a surety of supply from the Department to the WUA, but short-circuited the discussion on distribution between the farmers, assuming that it would be equal and transparent. Besides constructing the community as a monolith, entitlements were also based on the logic of horizontal power relations within the community.

They overlooked the fact that communities are historically and socially situated, and have their own rules for resource management which can be unequal; entitlement to participation, in shaping and reshaping social practices, is privilege of the few. For example, though the MMISF Act stipulated the condition for

women's representation, and WUAs did consist of female members, I was usually directed to the male member of the family for discussions (Field Journal, February 2012). This lack of voice also meant a lack of entitlement towards the other uses of water (cf. Van Koppen et al., 2006). These remained absent from the discussions on community participation and *hakkadari* as entitlements were tied to land right, making irrigation for agriculture the dominant use of water. In the Jahot system, farmers stayed in their respective fields rather than in the village, therefore the household and irrigation needs of water were often joined together. This discussion, however, only surfaced during scarcity periods and more so in the tail regions. I discuss this further in the next chapter.

7.3.3 Sabotage of the system: the geographies of power

As already explained the entitlements were piloted in the head of the system and later upscaled to all the WUAs on the LBC. The head of the canal system was dominated by large landholders with strong political leverage. These included the constituencies of Mr. Navade and Mr. Bajirao, in Viladri and Pimpegaon respectively. The membership of these WUAs showed a complex mix of interests: sugar barons, political fortunes and cooperatives - and thus water - played a central role in this power matrix. Mr. Bhonsle, from Prerna, explained this to me:

> There is a major issue in Jahot where rehabilitation has been done, where the lands go in double digits, they are lifting water from other sources and all of them are the haves i.e. prosperous farmers. They do not listen to anyone. This is all positioning of the resource and it is politically determined. Therefore you cannot make it right tomorrow, because these two lines are going to coincide. These are the people expected to hold positions and bring change. Reforms in Jahot sanctify rather than remedy these wrongs (KI113).

The embedded networks of power, which have proliferated in the Jahot system since the introduction of canal irrigation, have also been hard to displace. For example, distributary (DY) 12 had two WUAs: Triveni and Balaji. Triveni was in the head and Balaji in the tail of this DY system. The Navades dominated the Triveni WUA committee and in Balaji an intricate balance was maintained between the NCP and the Congress members.

Mr. Vishwasrao, a former chairman of Balaji, mentioned that "it was important to maintain a balance between our people and theirs to ensure the functioning of the WUA". While farmers in the head boasted of the power of cooperation and

claimed that the Department was solely responsible for the misdistribution of water, farmers in the tail spoke of the nexus between the Department and rich landholders that was creating a system of inequity. Mr. Vishwasrao's fields were located at the start of the tail. Since he had access to a lift system from the Jahot river, the situation was not as dire as was the case with other tail members. When I met some of the tail-end farmers from Balaji, they complained of the collusion between the Department and the powerful landholders in Balaji, and expressed their concern in this way:

> The big farmers above us do not release water, someone needs to tell them to close the water, who will tell them? No one listens to the CI and he does not say anything to them, he takes money from people and keeps quiet. If they do not give water to us, we go to the MLA and then they tell the irrigation Department to release water for people in the tail. No one demands through the WUA since people in the head have borewells and wells, once the water is in the canal, it recharges their canals and borewells. They do not need to go to the irrigation office. If they want water, they will put pipe in the canal and draw water, no one can stop them. We need to go ten times and tell them that we want water (KI62, KI63).

Several issues emerged in this tale of capture. It highlighted the differentiated relationship that farmers of Balaji and Triveni shared with the Department as well as the brokering involved with the MLAs. The internal differentiation between farmers was also on the basis of access to other sources of water, especially wells and bores. In many ways this differentiated access to diverse sources of water also created vertical slices of power. This does not mean that they did not rely on canal water, they rather saw it more as a source of recharge than explicit irrigation. For example, Mr. Jagmohan Navade owned land in the middle of the distributary. He grew sugarcane and other fruit crops. He told me categorically that he will only let the water flow downstream once his wells are recharged (KI 54).

The entitlement system froze the inequities that were inherent in the canal system as water was determined on the basis of land ownership. Mr. Raman at Prerna highlighted the skewed patterns of this land distribution:

> It is not equitable; it covers only the command areas and depends on how much one owns land. We are talking about farmers who have land of 1 acre to 2 acres against landholders who own lands of acres in double digits. Small owners have no voice. Is this fair? (KI114)

The case of Balaji and Triveni showed complete absence of entitlements in WUAs though they were the first ones to be taken into pilot programmes. There were problems of head and tail within the canal, on the distributaries and minors, and between large and small landholders. Procedurally, the MMISF and MWRRA Acts tried put in place enough checks to prevent this capture by recommending tail to head irrigation. Mr. Parekh, the official in charge, was confident that entitlements would limit this capture:

> Big irrigators should not get water as per their wish. Their people should be trained by NGOs as well as their Departments; this is your system and not of the big irrigator. We have given preference to the tail end so that the system is fair to everyone. The big irrigators expect to get large shares of water but we have fixed the quota and they will not get water beyond the quota (KI40).

Undoubtedly Mr. Parekh's views on entitlements do not take into account the relationships of power that are formed in the Jahot system, some of them sustained on certain social and agricultural systems that had pre-existed before 2006 reforms. For example, the system of granting blocks created large disparities in the canal system since farmers situated in the head of the system were its chief beneficiaries. In Chapter 5, I demonstrated how the block system was a particular innovation in Western Maharashtra to make water systems profitable during colonial times. They also led to the spread of sugarcane cultivation in this drought-prone region of Western Maharashtra. For the large landholders, the block system guaranteed water supply when they entered into a six year contract with the Department to receive water. "The Department had to deliver water without any excuse or we could take them to court," said Mrs. Gaekwad, the Chairman of Balaji WUA. Mrs. Shyama Navade, though a member of Balaji, did not face problems with water delivery as was the case with other members in her WUA. Her land was located in the head of the system but she did assert that with WUAs, there is no guarantee of water, and blocks were a better system. With these pre-emptive rights, these farmers also, in time, because of sugarcane cultivation, became large landowners. Mr. Sayaji explained this power equation:

> They [the Navades] have large landholding and others are relatively small farmers. First the fields in the head are irrigated, and they get water first. This is the system since many years. We have heard such complaints from farmers of Balaji WUA. We do need to change this system (KI41).

The field officials maintained that the block system was in place until 2007 when it was replaced by the new entitlement system. They also confirmed that farmers in the head seem to have benefitted greatly from this system. Though the block system of water distribution was abolished before the reforms came in, the sugarcane fiefdoms it had generated created resistance to entitlements from the large landowners. Wade (cited in Joshi, 2000) in his study on South Indian irrigation system argues that transition from different property regimes not only 'locks in' the farmers who resist rationing into episodes of struggle, but even officials may develop a behaviour pattern which prioritises irrigation over water rationing. In Jahot, this not only meant resistance towards entitlements as a system of water rationing, but also resistance in displacing the relationship between the field bureaucracy and the farmers.

These large landowners were also the heads of the sugar cooperatives and political leaders who played a crucial role in determining the dates and delivery pattern of the water rotations. There was also greater resistance on the part of these farmers to receiving entitlements as the system divided water on area basis and not according to a per crop requirement. This meant a reduction in the quantity of water. Also, these farmers benefitted immensely from the under-pricing of water, which would enable them to grow high value crops such as sugarcane for the price of subsistence crops such as *jowar* (sorghum). This system thrived on the basis of rents collected by the canal inspector. When I met Mr. Vitthal Navade at the Viladri *panchayat* office, he and his brother owned 15 acres of land in the Triveni WUA command. While they did not see any material change with the coming of the WUA, they mentioned that the entitlements system may not be as flexible as the old demand system-

> If I have demanded 200 cusecs, they can give me up to 300 cusecs of water: there is more flexibility under the demand system. But if they measure and give us water (entitlement), they will only give us 200 cusecs (KI69).

What Mr. Navade called "flexibility" of the demand system was actually avenues for corruption through under-pricing of water and unaccountable water delivery. The role of the canal inspector was pivotal in these transactions. Several studies on irrigation projects in Maharashtra and in India highlight the centrality of the canal inspector diverting water streams, and how the inspector, as the State,

works to the benefit of elites and big farmers (for example, Parade, 1995; Joshi, 2000; Narain, 2003).

When I accompanied the canal inspector, Damodar *bhau,* during the water rotations in Balaji and Triveni, I noticed that he would only let me speak to those farmers who were getting water, and also were polite to him. The section officers had put him in charge of taking me around during water rotations. Damodar *bhau* mentioned that his job was to distribute the water as per the demand collected by the Department, which has told him how much demand needs to be collected, and that he is helping the WUAs in their tasks:

> We are delivering water on the basis of the old system because people (farmers) do not know about the new process. We need to train the WUA members about calculations and producing the bill. Farmers can complain to the WUAs if they do not get water. We will train them first and then they will understand the process. *Paani hakkadari* means that the farmer in the tail should get water first and the rotation should be planned as tail to head. He will pay as per the water that has been delivered to him. I roam around and ask people about how much water they want and then take out the bill as per their demand. The WUA members will also see how to do it, and then we can adjust things (KI46).

Damodar *bhau's* style of work highlights several key points about the head end system in Jahot. He agreed that water is not being delivered as per the new entitlement system yet, and the Department is still in charge of the rotation. Though he placed enough emphasis on training the farmers, I did not see any representative from the WUA with him when the water was being distributed. Of course, we walked across several fields and farmers surrounded him, some demanding water and some pleading for water (Field Journal, March 2012). Amidst this chaos, where people started complaining to me about water, I observed that there were no measurements in place. More significant is the description that Damodar *bhau* gave me for *paani hakkadari,* which is tail to head irrigation, as he knew little about volumetric pricing and measuring devices.

Figure 7.6: **Diversion during water rotation in Triveni**
(April 2012)

The case of Balaji and Triveni shows how different rationales and interests intersected in the head end system and how the Department and the farmers colluded to maintain a system which guarantees them water notwithstanding the absence of any clear lines of responsibility as envisaged in the reforms (cf. Baviskar, 2004). The senior officials either complained that farmers were not interested and therefore they had to take charge of the project, or justified their patronage on the grounds of training the farmers who were still '*shishu*' (children) and needed to be taught. The farmers gave a different account of this situation: the tail end farmers complained of collusion and the head end farmers complained of "denial of the right to collection". Amidst these contrasting positions, it became fairly evident that different interests had come together to maintain the status quo, and little had changed by way of reforms.

7.3.4 In search of entitlements: demand vs. right

In several interviews, I heard the officials complain about the progress of reforms, lamenting that the farmers are not interested and do not want this system. One of the reasons for this, they stated, was that "they have never faced water scarcity and they have a surplus of water, therefore they do not know the value of water"

(KI41). The reformist narrative places a great deal of emphasis on scarcity as the driver for efficient water management. For some scholars scarcity is an incentive to rule formation and rationing water use (Wade, 1989; Bardhan, 2005), and for others, such as the World Bank, induced scarcity through pricing reform may result in water use efficiency by the 'wasteful farmers' (World Bank, 1998a). In Jahot, similar assertions were made by the zonal coordinator of Prerna group working in the area, Mr. Bhonsle stated that due to conjunctive uses of water, the demand for canal water is not as high as it should be and farmers (in the head) do not demand water as flow irrigation recharges their wells and bores. Similarly Mr. Raman from Prerna also said:

> Whenever there is shortage of water, they (the big farmers) get it released through political connections. So we are basically asking the have-nots, who have never seen water in the canals, to make demands and pay. If we go and ask the farmers on lift to pay for water, they say, 'I never ask for water, why I should pay?' We have to have mechanisms and policy, clear cut guidelines, and at the same time motivation to implement it. If we are not able to do this in pilot projects, how should we replicate this model in other areas? (KI114)

A large section of the Jahot system benefits from four distinct sources of water besides the Jahot canal. They are the Bhima River, the Jahot River, the backwaters of the Uzani dam and groundwater. Out of the 36 WUAs on LBC, 21 WUAs are situated along the banks of either the river Bhima or the river Jahot. Using lifts from rivers and other adjoining water bodies is a common practice. In fact, one of the tail end WUAs, according to the field official, opted out of flow irrigation and switched to lift irrigation.

Over the years the failure of the canal system has driven the farmers, who require perennial sources of irrigation, especially for sugarcane cultivation, to these diverse sources of water. These sources of water also come under different administrative jurisdictions and are not necessarily under the Jahot sub-division. This meant water regulation of one source of water did not directly affect the capacity of the farmers to harness other sources of water to irrigate their crops. This is also demonstrated in the case of Balaji-Triveni in the previous section, where farmers used groundwater and lifts from the Jahot river. The case of Sangam WUA, however, was slightly different.

Figure 7.7: A lift irrigation pump in the Sangam WUA
(February 2012)

As I mentioned earlier, the idea of demand is central to the water delivery system under *shejpali*. In contrast, the entitlement system created a two tier distribution and demand system. While entitlements were calculated for each rotation, water delivery was maintained through the *shejpali* system, which required the farmers to place demands for water. The Sangam WUA was at the heart of this parallel system of demand, sustained on a complex system of diverse water use, especially through the lifts from the backwaters of the Uzani dam. This WUA has 657 members and at 986.03 hectares has one of the largest CCAs in the Jahot command. I arrived in the Sangam WUA with the official information that this WUA has not put in a demand for water as the majority of farmers drew water from the lift system in the Uzani backwaters. However the WUA members complained that they had stopped placing demand for water because they had not received water for many years. One farmer who was quite anxious to know if I could get water for him, remarked in our first meeting in Vinaygaon *basti,* in February 2012:

> We were told that we have to handle all the work of the WUA, handle the rotation and deliver the water to the farmers, collect 100 percent water charges and if we do that, 50 percent of the amount will be returned to us as an incentive. But since we do not get water, there is no meaning in demanding water (KI71).

Figure 7.8: **Gangu *tai* and Mr. Khamkar next to their fields in the Sangam WUA** (February 2012)

The failure of canal system has driven a majority of farmers to the lift system. Lifts require setting up of infrastructure, i.e. laying down pipes from the field to the source of water. Gangu *tai* (elder sister), a fiery lady from the Sangam WUA, told me that a lift irrigation system required an investment of 5 to 6 lakh rupees. Because it is an expensive system, farmers often had to take loans to set it up. This not only meant that rich farmers were able to afford this system but it also had a corresponding effect on the nature of agricultural produce. Only the profits obtainable from sugarcane could ensure repayment of the loan. As with other parts of the Jahot system, sugarcane was also the dominant crop in the Sangam command. Thus the cultivation of sugarcane, whereby returns were approximately equal to 1000 US dollars per acre (KI81), and the propensity to opt for lift systems almost went hand in hand as one could only secure this expensive system if one had the support of a high value crop.

Figure 7.9: **Green gram fields irrigated through the lift system in the Sangam WUA** (March 2012)

As I met more members over the course of few days, I discovered that the failure of the canal system had driven a large proportion of farmers towards lift irrigation. Initially the richest farmers secured permits to draw water through lifts from the backwaters of the Uzani dam. It turned out that the committee members of the WUA were farmers who had taken recourse to lift irrigation systems and did not have real stakes in flow irrigation. They did not discount the value of the canal water as it recharged their wells, but they were noncommittal about working towards setting the system right. While, on one hand, the failure of the canal system drew people towards the lift systems, on the other it also drew away a section of poor farmers to migration or agricultural labour. As they could not afford an expensive lift system, poorer farmers sold out land to the rich farmers and migrated as labour to the city. However, Mr. Khamkar, a young farmer battling for the cause of the marginalised farmers, said:

> 50-60 % in this WUA are on the lift system. Those who have water on the lift system have no tension. The committee members, secretary and the Chairman of the WUA are on the lift system so they do not work for it. Those who require water from the canal and are solely dependent on this source are ignored by the committee. Only these big people were given the opportunity to become members, the government will not come to us poor people, it will go to the ones they know (KI74).

This collusion and bias in selection also had a corresponding effect on the nature of demand for the canal water. Lifts created a major problem in the formation and incentivisation of the WUAs and thus sustained a parallel system to entitlements. Since the committee members did not treat canal water as the main source of irrigation, their stakes in getting canal water were low. The case of Sangam also showed that these farmers were not a monolith and they had different identities. Some resisted the Department and wanted water, some were the free riders, some were the contractor-farmers; their relationship with the Department was not merely that of a villager or farmer but also of the group, which needs doling out of irrigation works from the Department. In the Sangam WUA, some of the committee members were also contractors and shared close relations with the officers (KI84). These were the same people handpicked as committee members in the WUA.

Nearly 30 percent of the farmers who solely relied on canal water continued to operate on the old system of demand with the Department. Demand was thus confined by the relations of responsibility and accountability between the handful of (non-lift) farmers and the Department. The farmers claimed that it was the responsibility of the *shaasan* to ensure that people get water and therefore to make sure that the farmers filled in the forms. There was also a position of ambivalence of jurisdiction and accountability between the *shaasan* and the WUA whereby the farmers argued that the *sanstha* cannot do anything unless the Department would guarantee the supply of water. This WUA was caught in this contradictory framing of demand where the Department argued that they do not give water since there was no demand for water, while the farmers claimed that they would only demand water once they 'saw' it. Gangu *tai* explained this paradox to me:

> The Department only makes promises but they do not work. The WUA has not demanded water to date [February, 2012]. We get water today and it disappears tomorrow. Therefore there is no point in making a demand for water. Some people do not have water to drink: We will have to fight for this. People who rely on canal water tell us: 'let the water come first and then we will see'. This time we saw water for the first time in this area for twenty years but it came one day, and stopped the next day. People want surety that they will get water and then only they will fight for it (KI75).

The Sangam WUA sustained itself on a parallel system of demand-based *shejpali* and entitlements. It underlined the principle need for surety and guarantee of water as far as the relationship between farmers and the *shaasan* were concerned, but also highlighted how non-canal based water sources were fragmenting the entitlement-based bulk water consumers. These overlapping sources of water have created impediments to user formation, on one hand and calculation of entitlements, on the other. Farmers who rely on other sources of water, especially through lifts which are more stable and predictable than canal water, choose to benefit from flow irrigation only to recharge their wells. As a result, they neither place demand for water nor are ready to pay for this water. Moreover, entitlements, which were calculated at the project level, did not incorporate such diversity of uses and users except for the water that is lifted through KT Weirs and lifts permitted on the canal (KI41). Despite the fact that some farmers and water user associations have opted out of the flow system, their entitlements were being calculated and water was balanced across the system (as I will show in Chapter 8). The officials were also aware of this problem and said that they "sanction water to everyone, but people who rely on canal water are fewer in comparison to those who rely on other sources. It is for this reason that they get water double or triple the amount". This also affected the returns to the system (KI41). Therefore applicable and sanctioned entitlements became more a matter of guesswork and adjustments rather than calculations.

7.3.5 Missing in action: the local regulator

To ensure accountability in the system, the projects covered under the reform required a regulator to be appointed to ensure that the water is measured and delivered to the WUAs according to their sanctioned entitlement (MWRRA, 2007). The regulator's chief responsibility is to ensure that the entitlements are calculated, as per the regulations and approval of the MWRRA, and are delivered in the right measure to the WUAs. A WUA representative should also be present at the time of this measurement. In the case of disputes between the Department and the WUAs related to water distribution, the regulator is the first point of appeal. The regulator, by design, is not conceptualised as a local body but as a representative of the MWRRA (KI10, KI26). The Acts also provided for a Public

Dispute Resolution Officer (PDRO) (Government of Maharashtra, 2005b), the Executive Engineer who is the second point of appeal after the local regulator.

I met Mr. Jadhav, the local regulator for Jahot, at the sub-division office in Shrigonda. As we began our conversation, he told me that he had several charges and could not find time to perform the duties of the regulator. Moreover since he is in charge of the adjoining Ryat project, he could not be present for the rotation in the Jahot system since the water is released about the same time as in Ryat. He stated:

> Yes, they asked me that they wanted to put my name as the regulator. I do not get the time as I have the charge of three sections under me. And the rotation of Jahot starts simultaneously with Ryat [adjoining system], which is under my charge. How can I leave that, how can I be present in two places?

This revelation corresponds with the sentiment of many other local regulators whom I met during the course of field visits in Maharashtra. In Nagpur, the officer-in-charge was emphatic in telling me that it was "unfair to put so much burden on officials who are saddled with paperwork" (KI32). Mr. Jadhav was among the many such regulators who were appointed to meet the targets and conditions of regulation, but were unable to do so. However, he also highlighted that even if he was present, things might not change very substantially. He drew on his experience of the Ryat system and said:

> We do not have enough power. There are all these rules and regulations and government officers know it but they [farmers] are using political interference when they want water. Then the government officer cannot do anything. The rotations and water distribution in *rabi* were on political lines. Politics is the rule of the majority. Even if they are applying faulty laws, they are right. People get benefits from a faulty system. Measuring devices are there but they are faulty, everything is on guesswork. The Government should charge them two or three times more, so that they will stop this water loss and excess utilisation (KI43).

Mr. Jadhav's remarks unpacked the intricate web of relations that exist in the Jahot system. The field officers who work under pressure from politicians feel that these rules are difficult to implement in such a system. Often these remarks suggested the absence or limitation of this regulatory role, and raised an important question as to who bore the responsibility of verifying that the entitlement was delivered to the WUA. I raised this question in a series of discussions that I had across the bureaucracy and the MWRRA. Several officers acknowledged this lacuna in design but defended the 'settlement' in the interest of time and financial constraints. They mentioned that this would take time to

evolve and the Department was understaffed to meet such needs (KI26, KI86). A senior official at the Pune circle office, who was also part of the project preparation unit when reforms started in Maharashtra, articulated his concern as follows:

> You are regulating your own colleague and this does not bring out the inefficiencies in the system. The regulator is a person working on another project but reports to the same hierarchy. Therefore, the role of independence and regulation gets diluted in the process. He faces a similar situation in his own project and does not see anything wrong with the state of things (KI27).

Thus the official affiliations of the regulator have prevented it from being the impartial overseer that it is meant to be. The absence of the regulator also raises an important question as to who owns the responsibility for ensuring that individual farmers get their quota of water. Most of the officials were silent on this aspect as the Act does account for inequity within the WUA. The officials at the local level made a two-level distinction: the Department-WUA relationship; and within the WUA. They placed the responsibility for ensuring justice within the WUA system with the chairman. For them, the WUA has the accountability to ensure just distribution. Mr. Parekh the officer-in-charge mentioned:

> In case of dispute, first they will ask the Chairman: where is my water? If that problem is not solved by the Chairman, the farmer will go to DLC. As of now they are coming to us. We also have the regulator but they are there only when the rotation takes place. He has to ensure the delivery of the quota. If they (the farmers) have any problem, they can tell the regulator, but he cannot meet everyone (KI40).

For Mr. Parekh, it was quite clear that the local regulator is not responsible for the "internal matters" (KI40) of the WUA. However, for other section officers who were supervising rotations and were also overseeing the transfer of power, the need for internal regulation was equally crucial. They agreed that a regulator should ensure equity within the WUA, but in the current design of things, this was not possible since s/he was the member of the Department (KI27, KI22). This emphasis on the non-staff requirement is less to do with the clause of impartiality cited in previous sections and more to do with the burden of work that the lower officials complained about in such projects. Mr. Sayaji explained:

> A 'clearcut' (impartial) regulator needs to be separate from the Department; officials should not be given additional charges. The regulator should have the responsibility of equity in distribution, and he should be responsible for addressing the crises of water distribution, and should be responsible for resolving disputes. He is the representative of the MWRRA (KI41).

The absence of this regulator was repeatedly justified at all levels, on the grounds of understaffing, too many responsibilities on the field officer, the inefficacy of having parallel regulation, etc. While the error was recognised in principle, the interactions clearly showed that the priority of water delivery was framed more in the language of system efficiency and structures than institutional and processual factors, the local regulator being one of them. Moreover, the onus of efficiency was on the regulator in terms of overseeing the measurement and delivery of entitlements, but ensuring equity within the farmers was not a priority with the local officials. These included officers such as Mr. Jadhav, who would often recount the numerous problems that they have to face while they work in the field, and did not consider measurement and transparency as a priority.

I have so far outlined the fundamental provisions that affected the translation of reforms in the Jahot system. While some of these pertain to design issues, which made entitlements amenable to bureaucratic capture, others are informed by the contextual and contingent factors of the *shejpali* system which made the presence of *shaasan* absolutely fundamental in the reform process. The implications of this haphazard diffusion were also dispersed across the Jahot system, as each of the WUAs operated in a distinct regulatory space, which determined the regulation of water. Fundamental to this field was the way the State (*sarkaar* and *shaasan*) was shaped by the social and resource demography in the Jahot system. Across the system the WUAs were put in place but were tied in different relationships with the Department: some existed as proxy organisations with different levels of collusion to maintain the status quo and others were staffed by prosperous or contractor farmers. I have explained that under the *shejpali* system there were several means by which farmers came to know about the dates of rotation. The level of information was contingent on his/ her social conditions and proximity to the Department, especially the CI. But the entitlements assumed an ‘informed’ farmer to be available to take in this new information and also put it into practice.

7.4 Conclusion

In the early months of 2012, the status of the Jahot project was far away from its original plan. The entitlements were being allocated and bills generated on volumetric basis, but the old system of water distribution continued alongside the

layering of entitlements. This chapter showed that the Jahot system were at the centre of the new and the old patterns of water rule, but new forms are still struggling for a material presence ideologically as well as materially, a struggle most visible between the old system of demands to the *shaasan* and the new system of entitlements. Entitlements in the Jahot system were unable to erode the social patterns of economic domination, as was evident in the politics of prosperity either through the sugarcane farmers or the lift irrigation farmers. This chapter showed how entitlements were reduced to mere paper and were watered down as they were subsumed into the language of rehabilitation, the ritualised practice of handing over, systemic biases of the canal system, social and institutional ties that pre-existed the reform phase and the institutionalisation of the reform process itself.

While the entitlement regime attempted to create a new set of users from farmers who owned land, the previous cultures of water use and access came into close conflict and contestation with the new system. This either reduced them to a layering over the entrenched systems of bureaucratic control or put them in parallel with the previous system of water by demand. Entitlements, in theory, were applicable only on the water that was delivered through the canal networks, whereas the farmers accessed water through a variety of resources which included groundwater, the backwaters of the dam, and lifts from the river. This created difficulties in the constitution of the bulk water users, elucidated through the case of the Sangam WUA, and led to a system of overlapping rules and overlapping water regimes.

The cases of Sangam and Triveni-Balaji also highlight the dual and dispersed nature of the State in the Jahot system. In much of this project, the WUAs were created to meet the targets of the reform, and water control remained in the hands of the Department. Represented through officials and field-level staff and also in relation to politicians, cooperatives and powerful landholders, the project of reforms in Jahot was virtually a "project of and by the State". The State had acted as a midwife to bring these WUAs into existence and had nurtured them into roles and responsibilities that suited its hydraulic supremacy. In Triveni, owing to the political might of the rich farmers, the bureaucracy was not willing to tinker with

the established principles of pre-emptive access when the entitlements meant a loss in volume of water to them. However, the rich farmers who had 'captured' the dormant WUA were willing to work towards reforms, seeing cost recovery and collection as part of their political and financial capital.

Distinction between political and technical issues is also a distinction between high and low politics of regulation (Li, 2007). This separation can be crucial in determining who controls and defines the regulatory process, and the choice of mechanisms of regulation, and bears important implications for practices of defining, labeling and framing (Hancher and Moran, 1989b; Morgan and Yeung, 2007). In the case of the Jahot system, the reform process was fundamentally defined and driven by the field bureaucracy, which remained the chief purveyor and implementer of reforms in the canal site. This gave them the scope and opportunity to determine the level of information, and the jurisdictions of rehabilitation and water availability. This also gave them the power to decide the norms and jurisdictions of water flows by privileging rehabilitation over entitlements. The farmers continued to depend on the Department for water and were not aware of the entitlement system. The NGOs declined to educate the farmers about the entitlements as a mark of protest against the unaccountable and non-transparent reform process in Jahot. A combination of the Department's technical supremacy and the NGOs' activist stance, coupled with the embedded role of the regulator, resulted in diluting the rights-based element of entitlements.

This *shaasan-sarkaar* combination constituted the State in the Jahot system and their interactions produced differential shaping of regulation. The case of Jahot decentred regulation in so far as the definition of entitlements and regulation(s) was co-opted into the existing patterns and structures of power, but it did not displace the relevance of the State itself. This chapter demonstrated the social life of entitlements as they were embroiled in the languages of rehabilitation, structures and gates and the dormant WUAs. Entitlements had indeed been subverted and reincarnated in fundamental ways in the Jahot system. This chapter narrated the story of subverted or missing entitlements; the next chapter will show how entitlements became the very ground for contestation of knowledge and authority in a tail-end WUA of the Jahot system.

8. Entitlements in Action: The power and performance of regulation

> Water [in the canal] is like a ball of ice in the hands of a king. When the king decides to distribute that ball among his subjects, it changes hands and goes from one person to the other. In this process, it begins to melt and by the time it reaches the last person, neither ice nor water is left. People at the tail end have a similar plight. By the time it is our turn to take water, there is none left in the canal. This is natural…
>
> Savita *tai* (Uzalgaon, March 2012)

Introduction

I was fascinated by this analogy that Savita *tai* drew to tell me how water scarcity has been naturalised (cf. Mehta, 2005) in the Jahot system over the years. This quote also presents the world view of farmers in the tail who see their inability to get water as part of a natural process, and highlights how these tail-end farmers relate to the Department, which has assumed the status of a king in their lives as water recipients. This long wait for water is an intrinsic part of the story of water rotations in the tail-end WUA where farmers have adapted to the fact that they indeed are at the end of the queue for receiving canal water[121]. They merely hope that some part of the ice, i.e. canal water, will reach them before it melts and disappears.

I arrived in the *Jai-Gauri Paani Waapar Sanstha* (JGP) WUA during the first summer rotation in March 2012. The JGP is located at the tail end of the Jahot system. This was the first time in several years that the rotation had started from the tail end of the Jahot system as well as within the command of this WUA. Tail to head irrigation has been a firm basis for demanding equity in water distribution in the canal systems (see chapter 5). Nevertheless this has also been one of the hardest to implement over the many decades of canal irrigation reform (see Rajgopal et al., 2002). For a tail-end farmer in the JGP, seeing water in the canal for four days was both a surprise and a reason to celebrate. The farmers, however, did not attribute this 'miracle' to reforms but to the sugar factory that was recently taken over by the Deputy Chief Minister of Maharashtra. The Department claimed that since water is distributed as per the entitlement of the WUA, there were better outcomes in the 2012 rotations. The majority of the WUA members seemed very positive about this change but were unsure how long it would last.

[121] Several studies have examined tail end deprivation as part of canal irrigation reforms. See Mollinga (2003), Narain (2003), Shah (2003), Rajgopal et al.(2002) & Chambers (1988).

In 2012, the JGP was a peculiar case in the Jahot canal system. It was one of the first WUAs that I saw handling the water distribution in the Jahot system. Located at the tail of the canal system, the JGP came under the entitlement regime from the *rabi* (winter) season of 2011. I had now stumbled upon a WUA where the jurisdiction of the Department supposedly stopped at the CTF (measuring device), and the entitlements were being delivered to the WUA. This chapter focuses on this transition of control from the Department to the WUA. After setting the context for the JGP (section 8.1), this chapter analyses how 'creation of consumers' through entitlements is embedded in certain relationships of power practised through politics of knowledge (section 8.2), questions of canal ownership (section 8.3) and different understandings of scarcity (section 8.4). In strategic ways these also reinforce the authority of the State, blur the distinction of state vs. community and constitute the regulatory cultures in the JGP.

8.1 Setting the scene

The JGP is based in the village of Uzalgaon. This village is located in the Karjat *taluka* of Ahmadnagar district. Located in the tail of the Jahot canal, JGP covers five distributaries[122] (henceforth DY) 24, 24A, 24B, 25 and 26. Neighbouring Uzalgaon is the village of Deluwadi, which is covered by WUA 27. Conflicts over water between these two WUAs were reported as well as observed during the water rotations.

In Karjat *taluka*, there are opportunities at several points to draw water from both the Jahot and Ryat canals, and some farmers are able to irrigate land through both these systems[123]. JGP has a Culturable Command Area (CCA) of 393.25 hectares, with 103 *vihir* (wells) within its command area. The entitlement (for any normal season) as agreed to in the handover contract is 387.32 thousand cubic metres (TCM) for the winter season and 323.74 TCM for the summer season (Government of Maharashtra, 2006a). This entitlement is applicable for three years (from 2009 onwards) and is subject to review by the MWRRA after three years (ibid).

[122] I use the term used in common parlance in the Jahot system, DY.

[123] In the common discourse, Kukadi enjoyed a better status than the Jahot canal system. People said that their WUAs were formed under the old Cooperative Act and the canal system was in a better condition as it was lined (KI87, KI88). Jahot was an older system than Kukadi, but both systems were taken under the MWSIP. I also made visits to Kukadi and met farmers and WUA members during my stay.

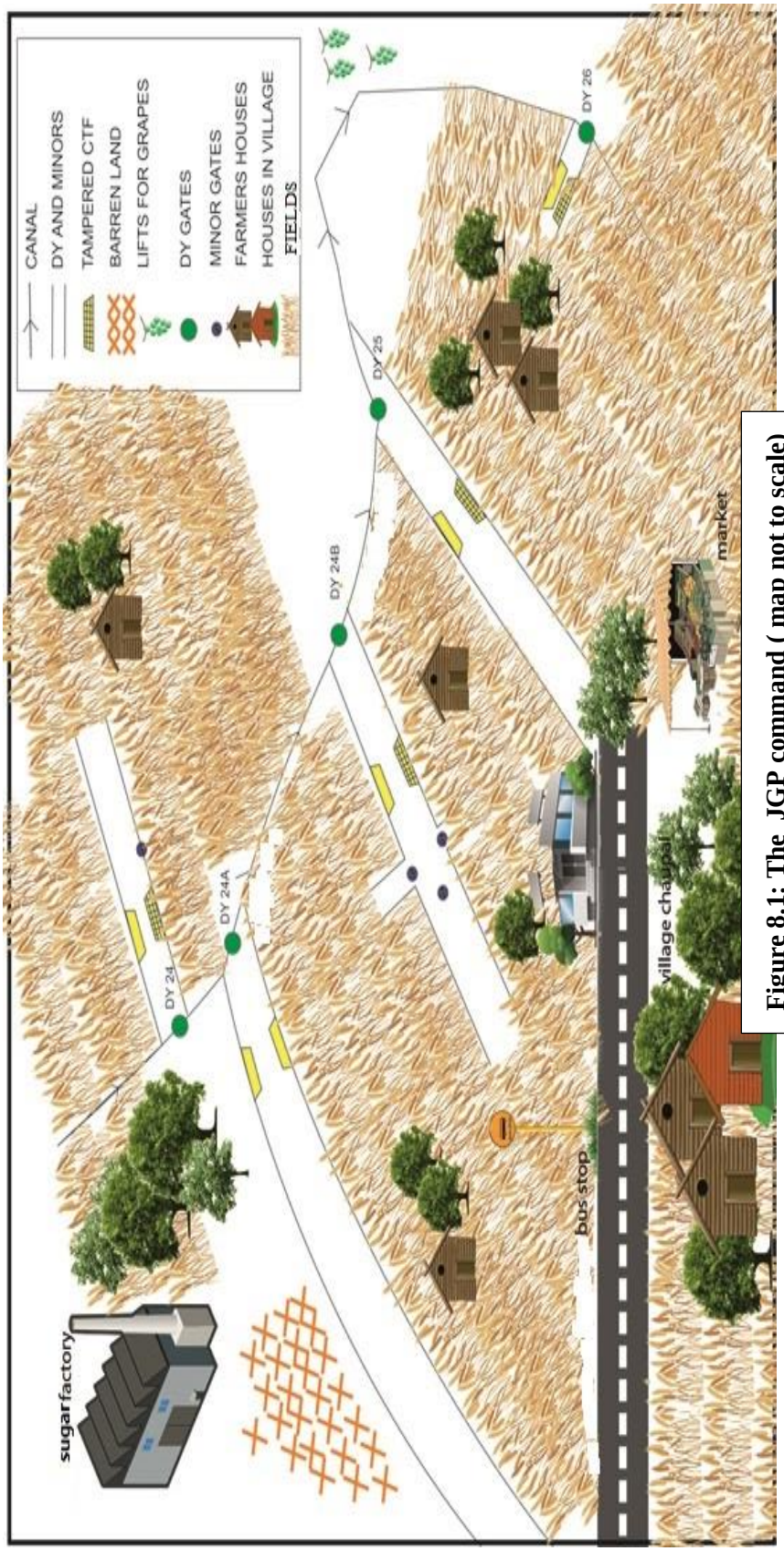

Figure 8.1: The JGP command (map not to scale)
(Designed : Pragati Srivastava ;originally hand drawn by Shilpi Srivastava with assistance from Sikandar Attar and Santosh *bhau*.

The dominant caste in Uzalgaon is the Maratha caste, with strong reverberations of group politics between the two Maratha sub-castes of Gawde and Sudriks. The majority of the landholders are either Gawde or Sudrik and they control important positions in the local governance system i.e the Panchayats, the dairy business and the WUA committees. The main occupation in the village is agriculture and the farmers cultivate sugarcane, pulses, onions, lime, fodder and *jowar* (sorghum). They also engage in livestock rearing and dairy farming. The canal water is used for the purposes of farming and livelihood activities, especially cattle maintenance[124]. However the need for water for livelihood activities is rarely expressed as a dominant need. I met *medpalaks* (sheep herders) near the canal during water rotations, but they did not belong to the village and were not the members of the WUA as they did not own land. Cattle rearing is also a domestic activity and the gendered division of labour has played a prominent part in keeping the discourse on livelihoods muted regarding the canal water[125]. Among the many WUA members that I met in the course of my work, majority of them were men. Even where land was registered in the name of women, it was their husbands or fathers who spoke for them. The public discourse on canal water is confined to irrigation activities and farmers (usually male) with land and the perspectives and rights of the landless *medpalaks*, women and their livelihood issues are conspicuous by their absence; it is only during the periods of scarcity, from June onwards that the livelihood discourse surfaced during the discussions (section 8.4 of this chapter).

The JGP was formed in June 2006 and the 'handing over' was completed in 2009 (Government of Maharashtra, 2009) . The WUA has 376 members, of which 333 are male and 43 female (Government of Maharashtra, 2009). The managing committee of the WUA has nine members. As far as the 2005 Act is concerned, there should be equal representation from the head, middle and tail WUAs, but such is not the case in JGP. The head-end, which also has the largest command area, is greatly over-represented with 6 members. Some farmers have dispersed landholdings as they own land in the head as well as the tail of the command. For

[124] Information based on interviews conducted with the JGP WUA members.

[125] For example, van Koppen et al. argue that gendered divisions of labour also create false dichotomies in the productive and household needs of water. Domestic water needs are often sidelined in the discourse on irrigation water (see Van Koppen et al., 2006).

instance, the first Chairman of the JGP and also a local politician, Mr. Vitthal Sudrik, owns land in the head, 24A, as well as the tail, 26. However, he became the JGP Chairman by virtue of being a member in the tail. Though the Act gave priority to the tail members on grounds of equity and representation of marginalised landholders, dispersed landholdings skewed this rule in favour of politically visible and strong people.

The logic of WUA formation in JGP is no different from the stories that were narrated in Chapter 7. The field bureaucracy selected the politically visible and influential people to circumvent the "headache" of elections. What is important and perhaps different in the JGP is the entrenched role of the State in governing these communities. Sanjay *bhau*, a small farmer who was initially a taxi driver and is now the canal inspector for the WUA, told me about the process of WUA formation:

> The *shaasan* [Canal Inspector] told us that if you form WUAs, you will get more structures and water will stay for more days. They also told us that if we have 100 percent collection of water charges, 50 percent will be given back to us but we have to give them 100 percent payment. Madam, it is a very difficult thing to get full collection. This is unfair, they have transferred the entire headache to us (KI81).

In this flow of information, there was more emphasis on collection and recovery of bills, with the added incentive of subsidies for one hundred percent recovery. To this the Department also added extra emphasis on structures and repair of the canal system once the WUA was formed. This galvanised the formation of this WUA. In November 2012, JGP was scheduled for its first election, but several discussions circulated around the grant of 15,000 rupees which was provided to the WUA in 2007. This money was given to the WUA for conducting *binvirodh* (unanimous) selection of candidates. In several discussions, the chairmen (former and current) of the WUA referred to this amount and said that "since they [were] the Chairman, the amount should be in their name" (KI80, KI82). In this way, the WUAs were also becoming both political and financially attractive to the farmers.

Along similar lines, societies were created and registered across the Jahot system, but the dormant case of Triveni-Balaji and Sangam WUA (Chapter 7) showed that these WUAs had not taken over the water distribution process. JGP was an exception to this rule. The possibility of getting more water, as promised by the

Deputy Engineer, gave birth to this collective enterprise. Another unique feature of the JGP is the delineation of its command area. Unlike other WUAs in the head system where the CTF are placed on the minors, in JGP the measuring devices are placed at the head of the distributaries. The official justified this on the ground of a smaller command area of the JGP. I observed the water rotations in the JGP and the following sections map this flow of water and flow of control across its command.

8.2 Rotations and entitlements: demand, ownership and regulation

The JGP handled the summer rotation of March 2012. It was one of the first few WUAs in the Jahot system to have taken over the process of water distribution. The WUA members explained that they had taken over to change the system and remove corruption, a regular feature under the *shaasan*. For this purpose, they had changed the process of demand collection.

As explained in Chapter 5, *shejpali* is the dominant method of water distribution and demand control. The demands were collected prior to rotation and water was delivered in turn. This process, as several farmers argued, was ad hoc and form number 7 (a form meant for lodging a demand for water with the Department) was seldom collected. This system, argued Ramdas Gawde, a JGP committee member, did not guarantee water to the farmers and resulted in under-pricing of water. Farmers circumvented the system by paying the rate for sorghum while they grew sugarcane. Taking this into account, the WUA decided to collect demand(s) after the rotation to ensure that the water was not "misused" and there was no "theft". I met Sanjay *bhau* on the first day of the water rotation in JGP and asked him whether he saw any change from the previous system.

> We have not collected demands prior to rotation this time. Under the previous system, farmers would demand one acre and use water for 2 acres, the Department was at a loss. In the WUA, we will charge people as per the water they have consumed and not on the basis of the demand. Once the rotation is over, I will go their farms and enter their demand, and every farmer will get water. No one can lie and steal in this system (KI81).

In several interviews, the farmers compared the WUA to the ad-hocism that had persisted under the rule of the Department. How did this understanding of demand interact with the idea of fixed quota entitlements? Though Sanjay *bhau* was unclear about his own role as the *sanstha ka patkari* (Canal Inspector of the

WUA), he was confident that WUAs were being set up to stabilise the demand for water in the tail. He explained to me that collecting demands after the water rotation is going to show the difference between fudged (previous system under the Department) and real demand (under the WUA). The logic which several farmers and especially the committee members in the JGP applied was that more demand would equal more water in the JGP command. They clearly had no information about the entitlements which fixed their water allocation as per their command area for three years. Therefore Sanjay *bhau* explained to me that he needed to work hard and ensure that water is distributed effectively to show that there was greater demand in the tail. This 'reality' would force the Department to increase their quota of water. They could then get more area under sugarcane cultivation. As Sanjay *bhau* tried to understand the implications of fixed quota through the entitlements, which were promoted on grounds of freedom of cropping, he was quite resentful and said that this way, he would never be able to cultivate more sugarcane or bring more area under cultivation.

JGP shared several features with other WUAs across the canal system. These relate to incomplete works, speedy hand-over, limited information, etc, but the fact that it was located in the tail, faced water scarcity in terms of low availability of water during rotations, and had limited alternative sources of water set it apart from the head and middle level WUAs, which were discussed in chapter 7. The upcoming sugar factory in the neighbourhood had now provided an additional impetus to increase the area under sugarcane. Therefore scarcity of water (cf. Wade, 1989) and the imperative of increasing demand through the WUA so that water could stay for longer in the canal was one of the chief drivers of cohesion and initiation of cooperation in the JGP.

For Sanjay *bhau* and others, there were clear incentives for maintaining the WUA to make claims on the canal water. Sanjay *bhau* also told me that they were promised more structures and more water if the WUA took over water distribution. However this user community, which was pulled together by the field officers, had ambitions that were different from being just a bulk user geared towards 100 percent cost recovery. In many ways JGP challenged the monolithic and technical understanding underlying regulation, and reinforced the

micropolitics of control that created contestations over entitlements, which became the very ground for control during water rotations to which I now turn.

8.2.1 Rule of the Technical: the performance of volumetric pricing

Volumetric pricing or *gin ke paani dena*, i.e. giving water in bulk through measuring devices (the CTFs), form the backbone of implementing the entitlements. These CTFs were constructed at the head of the distributary (DY). When the water was released into the DY from the main canal, the readings were to be collected in the morning and evening. These readings were then to be countersigned by the WUA chairperson and the WUA CI. This process lay at the heart of converting farmers to consumers who will now, as a collective, pay for the bulk water. The WUA has to ensure a 100 percent collection in order to be eligible for getting 50 percent of the money back as funds for maintenance. This task seemed daunting to many of the members in the JGP. They often told me that if the *shaasan* could not do so, how do they expect the farmers to make the 100 percent collection?

While the Department claimed that WUAs are being trained for volumetric pricing, this was far from reality in the JGP. Sanjay *bhau* told me that he did not know how to read the calibration device and no readings had been taken in his presence. During the rotations, gauge reading were taken but not at the CTFs, they were recorded at the main canal gauge (device at the head of the section of canal to check the flow of water).

Figure 8.2: **The CTF device in a head end WUA**
(January 2012)

Figure 8.3: The damaged CTF on DY 24 (JGP)
(April 2012)

Figure 8.4: **The damaged device on DY 25 (JGP WUA)**
(April 2012)

Several others had different stories to account for this measurement. Mr. Gawde is a former chairman of the JGP. He has 3.87 acres of land and his fields are located in the head-end of the JGP command. He confessed that the device impedes the flow of water but he knew little about the calculations because he "only knows how to read and write". Several other farmers reported that the water was not measured and that the device impedes the water flow. In some cases it

would be the narrowness of the pipe outlets, problems with gravity, and water flowing above the calibration devices, and in others the structure itself was damaged. Except for the head DY, 24A, the devices at other DYs had either been tampered with or were broken. In JGP, it was not difficult to ascertain the reason for this tampering. Since the water did not flow with enough force due to system conditions or outlet structures, the farmers decided to break the structures. Sanjay *bhau* never told me the names of the farmers but maintained that they broke the structures. There was an implicit collective effort to do so!

I met Chorekar *bhau*, the Department's Canal Inspector in Uzalgaon. During one of our discussions about the new system, he told me that he had asked the farmers to break the measuring devices because the water did not flow with enough force. By law, breaking devices is a punishable offence, but this was also a collective effort to get water! These acts of 'deviance' were not reported and neither were the complaints registered. The damaged devices were also strong evidence to suggest that water was not calculated on volumetric basis, despite the adamant claims made by the Department.

In JGP, there was a great deal of mistrust with regard to the measuring devices. Like Mr. Gawde, many other committee members thought that it required a great deal of scientific knowledge to understand the functioning of the device and decided not to question the *shaasan* about it. So after the rotations, Sanjay *bhau* took me to an educated young farmer, Ankur Gawde. A first year science student at the college, Sanjay *bhau* was certain that Ankur could explain the mathematics behind the CTFs. Ankur explained:

> The Department has put the gauge above the level and it is wrong, the water does not come with enough pressure and stagnates. This is the mistake of the Department. We used to get more water before the CTF was put in place, now we get less water (KI93).

These head-end farmers in DY 24 were convinced that the gauge obstructed the water flow. The canal inspector and the section officer-in-charge were aware of this mistrust but these issues were not reported to the officials above the local level. Mr. Sayaji at the sub-division office clarified that he had not received any complaints of devices being tampered with. He also said farmers and the CI cannot understand these calibrations and remarked that the CI does not

"understand entitlements, he just follows orders, he is not technical person" (KI41). Thus *gin ke paani dena*, which were in effect the entitlements, generated their own discourse of knowledge hinging on mathematics and calculations. By privileging the structure and the engineering around it, the CTF symbolised the social and material interactions between the Department and farmers.

This experience with mistrust of the CTF was not new to the bureaucracy. In several interviews with senior bureaucrats, they would often repeat that farmers do not understand "the mathematics" and "need to learn". The solution therefore was to train them, and in course of "time they [would] learn" (KI25, KI22, KI20, KI40). Errors were attributed to ignorance, not of the *shaasan*, but of the farmer. This also led to a displacement of blame and responsibility (cf. Chambers, 1988; Stirling, 2005) where, according to the Department, entitlements became hard to implement due to the uneducated and ignorant farmers

Mr. Prabhakar, former Secretary of the Department and now an MWRRA official, offered a different perspective on this situation. He said, "We are in a transition stage; very few societies have been formed. So we are issuing theoretical entitlements. We know it. They should understand that is their right"(KI24). Theoretical entitlements virtually meant entitlements which did not translate into water rights for the WUAs. While some officials were aware of the poor rehabilitations and incomplete works, they insisted as Mr.Prabhakar "that whatever is possible needs to be delivered", and this led to another version of entitlements, that is the so-called "possible entitlements" (KI24).

Possible entitlements were a practical approach to the realities of incomplete and slow rehabilitation and were seen as a way to maintain a balance of accountability to the Bank in the light of resistance of various sorts that have been outlined above. This thus amounted to a practice of myth and ceremony (cf. Meyer and Rowan, 1977) in regulation. By maintaining a ceremonial conformity to the reformist vocabulary of entitlements, the Department and the MWRRA were able to maintain the prospect of the survival of the MWSIP. This implicit ceremony worked its way downwards to where the state agencies not only maintained this myth of complicity but also were willing accomplices in challenging some of these rules. Despite this tampering and the evidence that water was not measured at the

head of the DYs, gauge registers were maintained, signatures collected and JGP was presented with the bill on a volumetric basis for the rotation in March. This bill was calculated on the basis of entitlements, and produced close to the magic figure of the sanctioned entitlement.

8.2.2 Serving the Bill: the politics of adjustment

The bill for the March rotation was never formally handed over to the WUA, but I procured a copy on request. I also noticed that Chorekar *bhau*, the Department's CI kept the three rotation registers close at hand: the gauge register, the bill register, and the rotation register. In the March bill, the JGP was penalised for water use in excess of its entitlement. It was served in English and the bill book, which was meant to be with the WUA, was also in English. Thus the micropolitics meant that billing was itself an alienating exercise.

Sanjay *bhau* felt that this is the first rotation in which "everyone received water and yet they were penalised for their *hakkadari"* (KI81). Since it was on him that the responsibility for collecting the water charges would finally accrue, he was perplexed and said that he "could not understand how the money that they have been asked to recover for one rotation is more than the sum of money that they usually pay for one full year?" This discrepancy had occurred due to the fact that farmers had no idea about the nature of entitlements and their sanctioned quota The WUA had consumed the water beyond their sanctioned entitlement, but did not know when and how this water was measured. Incidentally, the bills were signed by the (then) Chairman, Mrs Gawde, who later told me that the *bhau* sahib came to collect her signatures at her house at the end of the water rotations (KI94).

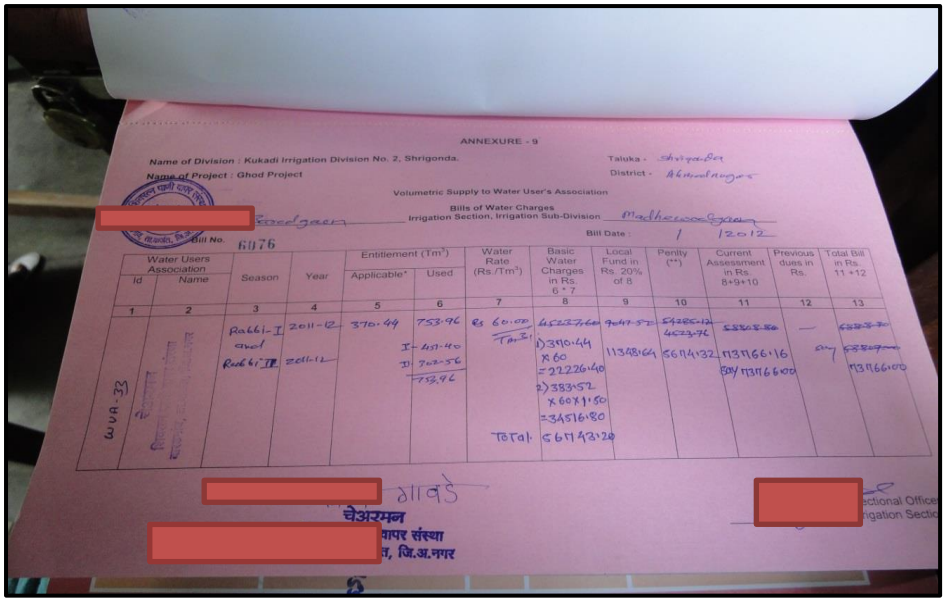

Figure 8.5: **Water charges for the rabi season (2011-2012)**
(May 2012)

This billing exercise was also reduced to bureaucratic procedures. Chorekar *bhau*, rising to the rescue of the Department, told me that the bill was prepared by the Section Officer, and that they had measured the water through the canal regulator and made *andaaz* (estimates). Not to dispute the estimation and guesswork that went into producing the magical figure of entitlements and water used in excess of the entitlements, this performance went against the grain of entitlement thinking. Instead of creating bulk consumers with *paani hakkadari*, for accountability and transparency in the system, the CTF had now created an unaccountable and non-transparent system clothed with a technical aura, which farmers could not easily challenge and the Department could manipulate with ease. Thus billing became a spectacle of bureaucratic procedures and rule by proxy. The mechanics of bill production - the language barrier, and the ownership of the bill book and the rotation register - reinforced a certain control by the Department. It also subverted the provider-consumer ethos embedded in the water regulation discourse.

While the first bill penalised this WUA for excessive water use, the second bill was adjusted to remove the penalty[126]. The officials explained to me that since

[126] The new bill was produced after I had left Uzalgaon for Mumbai. When I returned in August, Sanjay bhau told me that the bill had been revised and was close to the usual figure. He also told me that people in Uzalgaon thought that I had pressured the Department and used my 'influence' to make the changes. I clarified that I had no role in this whatsoever and had merely asked questions for my research.

some WUAs, in the Jahot command, are on lifts (as is Sangam WUA in Chapter 7), they have extra water to adjust this overuse of the JGP. At the WUA level, volumetric pricing created confusions over questions of who is measuring water and when and how the bill is presented. The bureaucracy, on the other hand, treated volumetric pricing as a target to be met. Mr. Sayaji, the officer-in-charge for sending information on entitlements to the MWRRA, explained to me the imperative of volumetric pricing as follows:

> We have made volumetric pricing compulsory from 2010-11 but we are not getting the bills; the section officers keep telling us but do not produce the bill. Unless we make the bill in volumetric pricing as per the entitlement, the WUAs will not receive their subsidy. Our own officers also need to act (KI41).

Mr. Sayaji's confession also showed that field officers were not producing volumetric bills and this got in the way of target completion. Thus, volumetric pricing served several ends: it was a means to ensure WUAs receive subsidy; it made knowledge technical; and it maintained the position of farmers as subject consumers, who needed to be taught and trained. Its over-emphasis on cost recovery was punctured with the politics of adjustment and contingency. Both farmers and field officials faced limitations in putting volumetric pricing in place.

While the farmers were unaware of their *hakkadari*, they were not averse to measuring per se, unlike in the head regions (Chapter 7). They did not trust the CTFs in the face of unreliable and low intensity water supply. The technical aura of the CTFs only exacerbated this fear. While these manoeuvrings highlight the everyday practices of water regulation, they also indicate the larger manifestations of these practices. They problematise the constructions of farmers as ignorant or uninterested in payment, and show how the technical practice of volumetric pricing was made socially malleable as per the diverse aims and interests of the canal officer, field officer, section officer-in-charge and the head and tail farmers, who had different understandings of the CTF. Besides the social and political shaping of volumetric pricing, the first rotation which was handled by the JGP revealed several blindspots (cf. Wade and Chambers, 1980) or gaps in this entitlements system. These gaps also demonstrated the axes of the relationship between the Department and the WUA, which goes beyond the linear service agency/consumer relationship. They also reinforce centrality of the Department in discreet ways. I now turn to those aspects in the JGP WUA.

8.3 Hydraulic boundaries and the battle for ownership of and jurisdiction over water

In the Jahot system, the cropping pattern in the head and tail regions of the canal system is different. Sugarcane is grown in the head and jowar in the tail. These crops need watering at different intervals. Moreover the variation in soil conditions and diversity of water sources in use in the head region also contributes to the difference in water needs of this region. For example, unlike the tail-end farmers, the farmers in the head region can access water through different sources, and therefore sustain sugarcane on well-water etc. However, water is released to the farmers as per the requirements of the sugarcane crop. The officials defend their decision on the grounds that the majority of the area within the Jahot command is in the Shrigonda *taluka*. Calling this situation a "crisis", Mr. Sayaji explained:

> The problem of the tail is that there soil is light, it does not retain water and therefore they require water more frequently. We call a meeting in which the members from the tail are also present. They demand water frequently on an interval of 7 to 15 days and the farmers in the head say we want water after 30 days, this is the crisis and we try to resolve it in ways that are beneficial to both head and tail (KI41).

Mr. Shiv Narayan Sopore was busy supervising the digging of wells, when I arrived in his field after the March rotation. He was the chairman of the JGP from 2009 to 2011. It was under his chairmanship that the handover from the Department to the WUA was completed. Similar to other WUA members, Mr. Sopore did not have any information about entitlements and volumetric pricing, but was very assertive that these changes do not mean anything unless the WUA gets control over the dates of rotation:

> The Department told us to form the WUA and we did so. But I have been telling *bhau* sahib that we need water on time. What is the point in getting water when our crops are damaged. I lost my crop in December because the rotation was delayed. They release water as per the wishes of Shrigonda *taluka*. Our accountability only starts when there is certainty of getting water for the crop (KI82).

Since the Department decides on the dates of rotations, which are usually delayed by ten to fifteen days (referring to the last rotation), it results in a reduced crop to the farmer. (Field Journal, April 2012). This sugarcane vs. *jowar* controversy is a regular head and tail controversy in any canal system (see Shah, 2003), and Jahot was no exception. However, the way the JGP WUA understood the notion of

their accountability also has important implications. The WUAs, in general, wanted more power in determining dates and time of rotation, which would eventually be the case once the entire canal was handed over to the Project Level Association[127]. However, given the powerful lobbies in the head region there is no certainty that these problems will be resolved even then.

As I demonstrated in the previous chapter, the head and tail controversy is not merely about cropping patterns but also about political divisions. Equity in this sense is complicated by trade-offs between quantity of water, timeliness and guarantee of supply, and not just the volume of water circumscribed in the definition of entitlements. Knowledge of rotations and how and when they are determined are issues that lay outside the purview of the WUA. It would be within their jurisdiction once the whole canal system was handed over to the PLA, but given the politics of rotation, the head-tail crises, and the competing realities and water requirement of different sections in the canal system, it is difficult to ascertain whether these issues could be resolved through community and participation, which are often treated as homogeneous categories. Besides jurisdiction issues related to the main system, there were several other concerns that created overlaps and question of control during these water rotations.

8.3.1 Where water seeps: Who pays for the losses?

Most perplexing was the issue of water losses and who should take responsibility for them. In calculating entitlements and distribution, the Department kept a margin of 20 percent losses as system losses; this was in relation to the main canal system. However, once the distribution system was handed over to the WUA, the responsibility for losses was placed on the WUAs. The understanding was that with the (supposed) rehabilitation of the system, the possibility of losses was miniscule, and in case of water loss, this would only lead to water recharge in the command area, due to seepage. This logic was plausible in the case where water flowed only through the command area, but in the case of the JGP, the

[127] In the three-tier framework of farmers' management of irrigation system, the WUA is formed at the lowest level (at the minors), followed by the Distributary level Associations (DLA) and then the Project Level Associations. Once the system is handed over to the PLAs, the elected members can then decide on the dates and time of rotations. In Jahot, the PLA had already been formed by the Department but there were disputes regarding membership between the farmers of left and the right bank canal making it non-functional (KI41).

geographical terrain was rocky in places (*udapa kshetra*) and this led to a curious overlap of command and non-command area.

During the rotation on DY 24, three farmers walked with me to show me the CTF (measuring device) for DY 24, which is located in the head of the JGP system. Water was flowing out of the DY beyond the CTF. There was a long and heated discussion about whether the losses were being calculated in the demand for water and whether the WUA would need to pay for these losses. To clarify this, we went to the house of Mr. Ramdas Gawde, a former Committee member, where farmers of DY 24 had gathered to register their water demands. Mr. Gawde instantly called up Chorekar *bhau* who told him that the losses were the responsibility of the WUA. Mr. Gawde was shocked at this revelation and felt cheated by the Department. He said that "the Department created the WUA but did not inform them of the details. We did not know that this [loss] would be calculated in the demand. The association should not have taken control of water distribution unless the work was complete" (KI89).

From this rotation onwards, incomplete works became a liability for the WUA. Underneath this shock was the growing realisation of the many responsibilities that the WUA would be taking on. Mr. Gawde and the other committee members that I spoke to told me that the officials had made it clear that they will not pay for any more repair works. While the farmers said that it was the DY that needed repair, the officers claimed that it was field channels and that the Department had never been responsible for the field channels.

Here the question was of water losses due to poor rehabilitation. But what was worrying Sanjay *bhau* was also the issue of water seepage. The wells in the command now came under the jurisdiction of the WUA and water seepage was, in effect, recharging the command area. Mr. Vitthal Sudrik, the first chairman of the JGP (2007-2009) said that a surcharge on wells was required or else the WUA would never be able to recover the costs for the volume of water, but other farmers including Sanjay *bhau* resisted the idea, saying that they have never paid for water in the wells.

The water that seeped in, either through losses or recharge, became a contentious issue in the translation of entitlements into individual quotas. This did not present immediate problems for the JGP. This was so because there were sections in the command that did not receive water due to poor rehabilitation, and were thus cut off from the supply - as was the case in the tail of DY 26, where farmers were now resorting to lift irrigation (section 8.4). This provided the JGP with the room to manoeuvre within the individual quotas of the farmers. I return to this group of farmers in section 8.4.

8.3.2 Lift vs. others

JGP comprised farmers mainly from Uzalgaon; however there were also a set of farmers from the adjoining village of Deluwadi who used water via a lift from the canal. This lift affected the velocity of the water on DY 26 (JGP) and the WUA below the JGP. This in turn created disruptions and quarrels between the lift farmers and the JGP farmers. These lifts usually operated in the night and siphoned off water between the DYs using motor pumps.

The lift farmers did not want to speak to me at first, thinking that I was an officer carrying out an inspection. When they realised I was a research student, they openly shared their problems. These farmers were members of the WUA in the Ryat project but owned a patch of land near DY 26 which was a non-command area. They irrigated their grape crop with the Jahot water. The lift farmers accepted that they were "stealing" water from the Jahot system but they had no better alternative since their fields were adjoining the Jahot canal. They stated that though they "know that they do not have any right on this water, they need it for irrigation of their crop". They defended this act of stealth and said:

> We have been told by the officers that we do not have any right to this water because we are from the outside [of the JGP]. These officers do not take our demand. We want to be included in the WUA. Then if we make the demand and pay for water, it will be our water and the *shaasan* will also get some money, which currently goes into the pockets of others, but we are told that we have no right. However we need water and if the water flows from here, and X says this is not your water and Y says you can't get it, we will still take it from here. We put pipes and lift the water automatically (KI104).

Lifting water by stealth was clearly illegal and section officers maintained that there was no permission for lifts in Uzalgaon. This illegal lift system created open battles of ownership and jurisdiction, not only between the Uzalgaon and

Deluwadi village but, more importantly, between the Department and the WUA. Sanjay *bhau* claimed that this water belonged to the JGP, while the lift farmers maintained that the WUA had no jurisdiction over the canal, since it belonged to the Department and they were accountable only to them. This problem had arisen due to the inchoate command of the JGP where 5 DYs of the main canal were grouped together to form the JGP. The bone of contention was the water flowing between these DYs, which, although flowed through the main canal, was also under the jurisdiction of the JGP as it affected the flow of water to DY 26.

These lift farmers were not against paying for water and were ready to go through the legal route by becoming members of the JGP. The WUA members also wanted them to do so as they suffered due to the reduced water velocity. Inducting them into the JGP, explained Sanjay *bhau*, also had the potential to raise the demand for water by raising the command of the JGP. An increase in demand meant that water could stay for more days. However, JGP did not have the right to decide this issue because the area irrigated by illegal lifts, was not under its CCA. The lift farmers saw the *shaasan* as arbiter and categorically said that the WUA could not stop them from taking water:

> The *shaasan* has control over canal and the JGP over the *chaari* [here: distributary]. The officials have more power. When they say something, the farmer will do it. Here, he is my friend and he is the secretary. I will not listen to him. We need better planning (KI104).

These farmers were adamant that only the Department could stop them from taking water. However, the section officers maintained that they had no knowledge of such lifts in the Uzalgaon area. Clearly these unsanctioned lifts thrived due to the grey areas of rent and corruption. This also created a battle of ownership over the canal water. The members on DY 26 were already suffering due to narrow outlet pipes and an unfavourable slope gradient, which affected the velocity of water. This siphoning off of water raised the question of how to regulate an open access system and how entitlements could be as accurate as the formulas claimed them to be.

Mr. More, the section officer in charge, denied the existence of any illegal lifts around JGP, as did the Chorekar *bhau*, which meant that there was no official record for these lifts. Thus the issue remained more local than official. This

invisibility created problems for the JGP and problematised the jurisdiction and control of the WUAs. They could neither stop these farmers for limited jurisdiction nor include them into the user association for technical reasons, even though these lifts affected the water flow and thereby the entitlements of the JGP. The Department had the right and legitimate authority to sanction or stop them but there was no record of the existence of these lifts.

This battle of ownership was, in real terms, a contest over the command area. As per the 2005 Act, the delineation of the command was a 'historic opportunity' to create a need-based system, but as demonstrated in the previous chapter, this process was led by the field officers and farmers ended up having a limited voice. While the lifts clearly fell outside the mandate of the JGP, there were lands within the command that had virtually become non-command. I now turn to one of the pivots of the state machinery in the JGP, a central figure who represented the *shaasan* to the farmers and defined the jurisdictions of control. It was through this officer that these illegal lifts survived in the tail. As Prof. Purandhare, an Aurangabad-based water expert put it: "It is amazing to see how the onus of the irrigation machinery rests on the shoulders of one man who has no technical know-how but enjoys immense power" - i.e. the canal inspector, who is the link between the Department and the farmers (KI16).

8.3.3 The small man of the irrigation sector: The *Bhau* Sahib

The officials in Shrigonda and above repeatedly argued that the CI, called the *bhau sahib* in the Jahot system, was not interested in the WUA since he liked to distribute water on a per area basis, which gave him greater leverage to exercise authority. "He opposes volumetric pricing because he fears the end to his rule through reforms and handing over", chipped in Mr. More when I asked him about the slow pace of reforms in Jahot (KI42). For Mr. Jadhav, the Prerna coordinator who was 'training' WUA members in other parts of the Jahot system, "the reforms meant the transfer of money from the CI to the WUA and for this reason he resists the reforms". Mr. Raman from Prerna explained the situation in this way:

> Every minor has a *patkari*, these guys are a parallel system. One side the Competent Authority is there, section officers are there and in parallel we are trying to overthrow it and create the WUAs. It's a conflict of interest. For one vehicle of reforms, we are putting in two engines or two drivers. The Act says that

> the Department will stop functioning, the control will go into the hands of the WUA, but the Department has not even released their machinery (KI114).

The Canal inspector was the lynchpin between the government and the farmers, and observations during water rotations identify him as a critical factor. It would be a generalisation to argue that he was against the reforms, because he did have vested interests in maintaining certain aspects of them. The emphasis on measuring and figures nowhere became so reified as in the activities of the CI, who displaced most of the questions of accountability into gauge registers and practices of measuring. For the farmers, the CI is the information link, the feedback loop for grievances and virtually 'the State'. "For so long, people only recognise him as the face of the government and therefore he has to handle the authority because ultimately he executes; he says no or he says yes and he has the right to penalise the farmer"(KI113), underlined Mr. Bhonsle from Prerna as he expressed his disappointment over the state of affairs in Jahot. These reforms downplay the powerful role of this 'small man', who not only has a vested interest in the system but also is a part of the social and institutional fabric of the canal system.

In the name of training the farmers, Chorekar *bhau* was present during water rotations in the JGP. Chorekar *bhau* was an elderly man, also a farmer with fields in another part of the Jahot system. He took great pride in telling me that he used the drip irrigation method and that he was fairly 'modern' in his approach to farming. I accompanied Chorekar *Bhau* during the water rotations, and he explained to me how hard he was working in training the farmers and how committed he is to the *vasooli* (recovering water charges), and penalising the farmers who do not pay up. As far as the reforms were concerned, he did not have any information on entitlements as *paani hakkadari,* but explained that he maintained a register for the gauge readings and collected the signature of the Chairman when required. When I asked for a copy of this register or the bills that have been produced for the WUAs, he immediately told me that the original is with his senior, *Rao sahib* (section officer).

It was Chorekar *bhau* who was training Sanjay *bhau* during the March water rotations, and exclaimed that he was happy that his "headache of water

distribution" was over and now he could concentrate on the *vasooli*. He stated that:

> Farmers have an advantage in this system. Through the WUAs, farmers will get water on time so that is to their advantage. We do not have any advantage, how can this be to our benefit? Yes, this has reduced my headache...I had a lot of power before but now politics has ruined it (KI48).

This training also meant that the practices of inclusion and exclusion as previously determined by Chorekar *bhau* were getting naturalised and repeated in the work of Sanjay *bhau*, who was now the CI for the JGP. As I have explained before, for the members of the WUA, as well as for Sanjay *bhau*, Chorekar *bhau* was the first point of contact. He was the source of information and guided him in the "right way for doing things" (KI81). He controlled the distribution of water and moved the jurisdictions of the command and non-command. For example the tail region of DY 24, though under the command area, did not receive water because it ran through rocky areas. Chorekar *bhau* defended his decision saying:

> I do not give water to them despite their demand because the water has to flow through rocky areas and there is a lot of wastage; just for the sake of two people, I cannot waste the water. I decline their request…they will not get water! (KI48)

This decision was not reversed even when Sanjay *bhau* took over the water distribution. He argued that delivering water to that section of the command only involves wastage and the WUA might not be able to do much about this situation. Some of the tail members of this DY had invested and constructed lined channels to get water to the fields. Mr. Arun Gawde, a committee member of the JGP, was one of those farmers who invested approximately twenty thousand rupees (340 US dollars) to get the canal water to his fields but others who could not afford to do so either looked for alternative sources such as borewells or waited for the *shaasan* to repair the structures.

8.3.4 Waiting for the *shaasan*

In JGP, there were several farmers who complained about incomplete works, but most of them agreed that structures were repaired between 2007 and 2010. They conceded that people did get water through rotations once or twice, but with time (2010-2012) these structures had fallen into disrepair[128]. They complained that the Department checked the flow of water and handed over the WUA to them. So

[128] This discussion is based on the conversation with a group of farmers on the tail of the head DY 24.

now the farmers and the WUA are responsible for the maintenance of these DYs and channels. In one of the group discussions on this, some of the farmers stated that they were not in a position to make such investments and the government must come to their rescue:

> The *shaasan* did 'good' work and we got water for one year, but these structures fell apart because of the rains. Two years back, officials from above told us that we had given a request in the *Mantralaya* to sanction plaster works but nothing happened. The point up to where the water comes is 1 km from here; *shaasan* needs to do something to ensure that water comes to us. The *sanstha* cannot make this investment from their pockets, it is not a joke! (KI100).

The farmers on the tail end of DY 24y had therefore taken to irrigation via bore and wells. Before the WUA could even get on its feet, it was saddled with the burden of repair works and gauge repairs. Sanjay *bhau*, who was now responsible for collection, explained to me that it would be difficult to collect money from people if they did not get water. Unless the structures are repaired, some farmers might not be prepared to pay for water: "they could fight with them now but not with the government", as was the case before the handover.

Both the Acts put in place a mechanism of checks via the public dispute resolution officer (PDRO) and the local regulator in the event that the entitlement is not delivered to the WUA. These farmers could complain to the PDRO but they used traditional mechanisms via the *Rao Sahib* and the *Bhau Sahib*. The irrigation bureaucracy above the section officers made the assumption that as "water is so essential and if [the farmer] does not get it, s/he will make noise about it. If anybody is not getting it then he can make a complaint and then there is a mechanism" (KI27). Alternatively, Mr. Prabhakar, another senior bureaucrat in Mumbai, explained the situation in this way:

> The farmers should know their share is and how much I should they get. But, in reality, they do not know! They are still not complaining because it takes time to go against the State! Speed is less than our expectation! (KI24).

While these reforms, through independent regulation and entitlements, clarified the role of the State in the form of the Department as the service provider and that of farmers as consumers, it did not factor in the relationships which have tied the farmers to the State or how the farmers see the State. Moreover, they need not necessarily be on an even footing (KI04). The fact that individual quotas, and thereby internal distribution of water, are the sole responsibility of the WUAs

may be too simplistic an understanding, which would gloss over the links by which farmers are tied to Department in relationships of control, patronage and even corruption.

WUA formation and independent regulation through entitlements have transformed the WUAs into economic entities tied to the State in economic relationships on the basis of taxes and rents. However, the farmers still feel the need for the State to intervene in the process of distribution. Mr. Vitthal Sudrik, a former chairman of the JGP who wanted to put in place clear rules for collection of demands and charges on wells. He said:

> The Department has an important role. If the Department is absent, farmers will start fighting. It is the mentality of the people that they do not accept the pressure of their own group since both are farmers; he will not accept my control. But if he knows that there is government then he will treat us as people from the government. If there is no government, then he will not listen to us. Farmers must know that there is the government ahead of the WUA (KI80).

The undercurrent of these battles and contestation not only problematises the superficiality of entitlements in such a contested terrain, but also the embedded role of the State, which pervades beyond the gates and structures. Entitlements treated the politics beyond the CTFs in an opaque manner which, in the case of JGP, was beginning to create worries. These were only exacerbated by the May rotations in Jahot – in 2012- when the spectre of failed monsoons and impending droughts loomed large over Maharashtra.

8.4 The long wait for water in May: dimensions of scarcity and the politics of a hot weather rotation

As I waited to observe the last rotation for 2011-2012, i.e the May rotation, there was a discussion among the farmers at the village *chaupal* regarding the 4th rotation. I met Professor *sahib* (as he was called) at the Uzalgaon bus stop. He is one of the tail end farmers on DY26. He asked me if I had any information from the officers in Shrigonda about the May rotation. Quite anxiously he told me, "If we get the fourth rotation, it will be good for us or we will not get water to drink!" Despite several enquiries that I had made regarding the uses of water in the JGP, from January to April 2012, this is the first time that I had heard someone connect drinking water needs with irrigation water in the JGP.

Within the canal system, this water in May was supposed to do several things: irrigate crops, recharge wells for the upcoming dry summer months which would sustain the *kharif* (summer) season and address people's drinking water woes. These needs differed according to the status and resource position of the people. As the prosperous head-end farmer, Mr. Navade, put it:

> The definition of scarcity depends on our water needs from the canal system. For me, it means I do not get enough water to irrigate my crops while for people in the tail, it may also mean that they do not have water to look after their cattle or do not have water for drinking (KI51).

During the first few days in May, the Department constantly underlined the fact that there was "no water in the dam" (KI41). However people in Uzalgaon were positive that they would get water for irrigation because the politicians would do something. The Department, to the contrary, told me that there was no water in the dam and whatever was left was reserved for drinking for the coming months. However, this time the farmers were right. After several days of waiting and denials by the Department, and rounds of meetings within the Department at the head office and Mumbai, the water was released under the banner of drinking water (Field Journal, May 2012). By this time there was a sense of urgency among the farmers for this rotation, which became more contentious with time.

Just before the water was released in the second week of May, a meeting was organised by the Department in the head office at Vadgaon located in the head of the system. It was attended by the guardian minister, Mr. Bajirao. This meeting was organised in the context of the upcoming water rotation, and the striking feature about this meeting was that it was dominated by or limited to the farmers in the head of the system. The farmers in Uzalgaon had no information about this meeting, although their officers and CIs were present. The immediate suspicion of the people in the tail was whether the water would be released only for Shrigonda *taluka* and not for Karjat.

Though this water was released for drinking water purposes, in reality the water was meant and used for irrigation (KI41, KI76, and KI81). The rotation had been planned from tail to head but there was rampant theft and stealing of water across the canal systems. People in Uzalgaon were not sure if the farmers 'above' would let the water reach to the tail. Since this rotation was declared as a rotation during "*dushkaal*" (scarcity) and explicitly released for drinking water purposes,

entitlements were not calculated and distributed during this rotation. But this was not the first time that such a scarcity measure was taken in Jahot. Several farmers across the Jahot system noted that over the years, the fourth rotation had usually been a rotation "released in the name of drinking water but people irrigate their crops" (KI115).

For five days, the farmers in Uzalgaon waited to receive water from this rotation. They tried to speak to politicians concerned, made trips to the head office, spoke to Chorekar *bhau* but there was little the Department could do to get water to the tail through a head system where farmers used all means to irrigate their crops and lift the water to fill their private wells (Field Journal, May 2012). Though there was enough police protection to ensure safety and security for the water, the rotation did not reach Uzalgaon in May. There were diversions, captures and blocks whereby farmers in the head-end adapted to scarcity by breaking and capturing water from the main system.

The formal definition of entitlements has steered clear of defining scarcity. The 2005 Act mentions that in scarcity years, entitlements may not apply. It defines scarcity as a year of below normal rainfall. There are safeguards such as reserving water for drinking, and allowing one acre of irrigation to each farmer. But what does scarcity mean in a competing context of water conflicts mediated by these relationships of power, as in case of the Jahot system?

Figure 8.6: A public meeting with Mr. Bajirao on the scarcity rotation at the Jahot head office (May 2012)

Figure 8.7: In search of water: well construction in the JGP
(May 2012)

Figure 8.8: **Illegal lifts being disconnected during water rotation**
(May 2012)

It was in this period of scarcity that several farmers spoke of their livelihood needs from the canal water and how wells in the command were used for the purposes of securing domestic water and maintaining the cattle for their dairy business. By mid-July, it had become clear that the monsoons had disappointed the farmers of Maharashtra. The crops were burning in the fields and there was a tough year ahead. According to Dr. Harsh Gawde, who ran a small medical

dispensary in Uzalgaon and also had four acres of land in the JGP command, this was not an unusual sight in a rain shadow and drought prone area such as Uzalgaon. He also mentioned that this crisis, which would affect the next seasons, was just unfolding. It is at this point that people started harnessing groundwater as it became clear that there may be no water in the dam for 2012-2013, apart from what was reserved for drinking. As I made my last visit to Uzalgaon in August, there seemed to be a sudden movement to bore more and deeper wells in search of water. This became a common topic in my farewell discussions (Field Journal; August 2012).

The MMISF Act, 2005, states that the WUAs shall "have the freedom of using groundwater in their command area, in the prescribed manner, in conjunction with canal water or otherwise there shall not be any extra charge to be paid to the WRD for the use of groundwater" (Section 25 (2), Government of Maharashtra, 2005a). Mr. Pomane, section officer in charge of the head section in the Jahot system mentioned:

> Initially we would also calculate the charges on well irrigation but now we do not do that anymore. Now this area is under the catchment of the WUA and they have the authority to calculate, we would only calculate volumetrically. Volumetric use has its benefit…if the rotation is delayed, they can use the water from the wells. They have also started bore. This would give them good sugarcane crop. Prior to rotation, it is well and bore and then canal water; the sugarcane survives on this combination and use pattern (KI43).

As canal water started failing the tail end farmers, they simultaneously shifted to other sources of water: lifts and borewells in the head and borewells and dug wells in the tail. The MWRRA Act overlooked the use of groundwater, and this glaring gap in water policy has gained state-wide and nation-wide focus. Groundwater in Uzalgaon, as in other areas of the system, is now used for irrigating the water-thirsty crop of sugarcane. However the hard rock topography in certain areas in the JGP command does not make it very lucrative or affordable for some small landholders. The official data on wells and bores collected from the *talati* (land records) office in Uzalgaon did not reveal the intensity of the water extraction that is in place in the region. Sanjay *Bhau* and Dr. Gawde told me that almost every farmer has a bore in the WUA, and they are on the rise with every period of scarcity.

Dr. Gawde recalled that the drought year of 2002 and the successive dilapidation and unpredictability of the canal water system had made farmers shift to borewells. The canal water would recharge the sub-surface wells, but now farmers have also started using borewells to recharge the wells. He made it clear that *dushkaal* was a recurring phenomenon every ten years and the farmers now plan according to this cycle and look for more practical solutions.

> For ten years, people have been harnessing water through the wells and bore wells. At the minimum every farmer has one or two borewells and wells. The water table has been declining. But only deep bores can sustain sugarcane cultivation in this year (KI79).

Groundwater sources have become essential for surviving drought periods. As already explained in the previous chapter, mixed use of water was widely prevalent in the Jahot canal system due to farmers having access to several sources of water. This mixed use was more common in the head and middle regions than some areas in the tail. Entitlements were introduced in a system which had lost favour with several farmers in the JGP. Their interest in maintaining the canal water was more to do with increasing the demand in the JGP command, a notion that was antithetical to a fixed system of entitlements. In times of failure, these farmers were dynamic agents exploring and exploiting all possible resources, political and material, to keep the water flowing.

8.5 Conclusion

This chapter has shown how the practice of entitlements was unfolding in the JGP. In theory, entitlements meant radical restructuring in the way irrigation water was delivered to the users. It entailed the revision of lines of authority between the farmers and the irrigation bureaucracy, but in reality these became grounds for contestation. For the field bureaucracy, entitlements normatively meant equity in distribution but how this would be implemented, was neither their concern nor priority.

Two distinct rationalities were in operation on the issue of entitlements in Jahot. They were practices of technical rule for the bureaucracy, who saw volumetric pricing as “its own task”, and therefore the site of measuring shifted from the jointly owned outlet gauge to the main canal where the Department’s legitimacy and control were unchallenged. On the other hand, the farmers equated “their

right over water" with a means to extend and increase their original quota and more decision making powers for controlling the water rotations.

In JGP, physical conditions for measuring water did not exist and were equally hard to administer (cf. Moore, 1989) At one level, entitlements were reduced to one of the policy objectives that needed to be met in order to show the progress of reforms. This is evident in Mr. Sayaji's subsidy argument (section 8.2). On the other hand, they were articulated through the complex process of volumetric pricing and CTF devices, which did not find a constituency with the farmers. For them equity and rights meant having more control over determining rotations and length of rotations, and ensuring that all fields were irrigated. It also nurtured a culture of blame displacement where errors were generally ascribed to the "uneducated farmer", or the CI, who was not a "technical person" (KI41). These also obscured the practices of power which were often embedded underneath these patronising labels.

The performance of volumetric pricing brought to light the disciplinary power of the State. JGP was required to maintain daily schedules and take responsibility for the delivery of water to each individual farmer; the tedious burdens of ensuring equity and distribution were transferred to the JGP and the Department retained the rights to demand payment for the water that was delivered. The 'science of measuring' made this an opaque exercise. They were required to maintain records and bill books, which were audited by the Department. Significant powers to allocate water (lift irrigation) and approve finance, determine rehabilitations, plan rotations and fix entitlements remained in the hands of the State. The remark of one civil society actor is telling in this regard as he complained that these reforms had transferred the "donkey work" to the WUAs and the government was "complicating" the process deliberately (KI114). To paraphrase Mosse (2003: 289), regulation thus brought the State into the village in new ways.

However, this control of the State was equally contested. Farmers also exercised agency from below by tampering the CTFs. Moreover the canal inspector also colluded in this exercise. The episodes of CTFs being tampered which went unreported, the March bill which was adjusted to waive the penalty of the JGP,

and the illegal lifts that continued to thrive show the diverse manifestations of interactions and meaning making of regulation (as also in Chapter 7). These also unpack the strategic relationships that are formed over and for water. This collusion and contradiction in the layered practices of the State lay at the heart of the varied manifestations of rule in the Jahot system.

9. Conclusion: Of Rules, Regulation and Reform

This thesis set out to study the process of the evolution of the 'independent' water regulation in Maharashtra. In the preceding chapters, I have focused on the discourses and practices that have shaped the water regulation reform in Maharashtra, and illustrated how the regulation reform has successively built on the already existing relations of power. I have demonstrated that the regulation reform is embedded in networks and practices of power. These extend from the systemic features of the water sector, such as the formation of the State-led water apparatus and the role of the bureaucracy, to the contestations over questions of what constitutes regulation and how should it be practised.

Based on these insights, I have argued that this neoliberal project of 'independent' water regulation is evolving with plural rationalities at work. While the national-level discourse reinforces a standard framing of regulation with the retreat of the State, these ideas become diffused into the institutional and discursive complexities at the state level and lead to plural meanings of regulation. From the politics over water allocations to the refinement of entitlements, regulation has become the very ground of contestation and articulation of the discursive and material power of the State. This also reveals that the narrow framing of economic regulation may not obviate the underlying systems and strategies of power on which the Indian water sector has sustained its practices. The regulation reform has thus been subsumed into a pattern of State rule rather than conspicuously displacing the monopoly of the State as originally envisaged in the reform. In this chapter, I conclude this discussion by briefly summarising the findings discussed in the previous chapters (section 9.1). I then move on to discuss the implications of this research for larger debates in the water sector and beyond (section 9.2). I conclude by considering future pathways to further research.

9.1 Putting the puzzle together

In this thesis, I have shown how 'independent' water regulation has emerged at the confluence of the changing conditions of political economy in India and roll-out neoliberalism. Hence the regulator *avatar* of the State, as a promoter of competition, was required to make space for private sector operators and become

a service agency to be monitored by an 'independent' regulator (a model followed in the telecommunications and electricity sector). 'Independent' regulation was thus framed in the language of 'depoliticised and scientific tariffs' and secure property rights that could mimic market conditions in the water sector, with an emphasis on the distanced role of the State (see Chapter 4). This 'independence' was hard to come by in a sector such as water which was quite firmly bound to the State, and which was - as this study shows - discursively constructed and also constituted through the practices of multiple actors. These included: the socially complex group of farmers in Jahot; the field bureaucrats who worked towards securing the rule of the *shaasan*; civil society which made claims on the State; and various senior officers in Mumbai whose interactions among themselves and with the politicians constituted and shaped the boundaries of the State. This diffused and decentred understanding of the State kept "the idea and the system" (cf. Abrams, 1988) at the centre of regulatory discourse and practice in Maharashtra. Therefore the path of the water regulation reform in Maharashtra was governed by the intangible realities of power - how power is exercised and how it is felt. Power, in this work, was relationally constituted, and through this optic I unpacked the politics of knowledge, the multiple framings of regulation, the diverse practices of regulation and, fundamentally, the practices of the State, which contests, competes and colludes to maintain this veneer of reforms. In the light of this understanding, this work has shown the agency of the State in reshaping the regulation reform in three ways:

(1) At the national level, the predominance of the World Bank view regarding 'independent' and 'apolitical' water regulator is increasingly been reshaped by the national bodies in the context of the Indian democracy and federal relations with greater emphasis on issues of accountability. It is important to note that the challenge here emerges more in the context of 'framing' regulation, i.e. what the appropriate goals should be for water regulation and how they should be institutionalised. The national level discourses do not displace the need for or relevance of a water regulator per se, but attempt to make it more salient to the anatomy of the Indian water sector (see Chapter 4), especially in the context of federal responsibilities.

(2) In Maharashtra, it is the political and bureaucratic agencies that shaped and subverted the 'independence' of the regulator. The fact that reforms in Maharashtra were led by the irrigation bureaucracy prepared the ground for mainstreaming it into the State project (Chapter 6). While the Bank imposed the condition of an independent regulator, certain factors in the state's political circuit and the taken for grantedness of institutions (cf. Douglas, 1986) ensured that this independence could never be realised. The first dent in this dream was the makeup of the Regulator, which was a mere relocation of retired bureaucrats from the Department to the regulatory office. This cross-migration, which is justified on grounds of experience and costs, smeared the independent image of the Regulator. Moreover, since MWSIP was negotiated through the Department, water sector reforms - to a large extent - became irrigation sector reform. This not only kept water utilities and groundwater regulation outside of the proposed regulatory framework but also drew the contours of the content of the debate. The cross-migration of ideas and people also brought with it the hydraulic bureaucratic culture and its incumbent labels to look at the water sector and its woes in the traditional closed sector approach (Chapter 6). The hydraulic language of the 'hardware and software' of water - where hardware referred to structures, storage, efficiency and losses and software included the process-based issues of equity and participation - often found its way into the regulatory language. For example, the reform narrative was subsumed in the phrase, "the gap between the potential created and potential utilised" (see Chapter 6). These phrases acted as cognitive filters in defining the boundaries and the purpose of regulation (cf. Douglas 1985). This hydraulic vocabulary also represented a certain shared understanding, shared beliefs and shared solutions for the water sector in Maharashtra, which became particularly pronounced in the emphasis on rehabilitation (see Chapter 7). Thus the relationship between the Department and the Regulator - and the internal constitution of the Regulator - led to the creation of a regulatory world, layered over with languages, work styles and thought styles in continuation with and sometimes limited by the Department.

The politics at the state level also presented fundamental challenges to the economic framing of regulation. By challenging and finally diluting the role of the MWRRA, the apolitical tenor of regulation was completely displaced. The

resistance that began with the 'imported' MWRRA model was further insinuated with fears of privatisation and water markets among civil society, which culminated in the politics of the amendment between 2009 and 2011. By limiting entitlements to the project sites where MMISFA was in force, the path of regulation not only became contingent on the progress and the politics of the MMISFA, but also removed the protective cover in the entitlements to prevent water diversions. This regulatory politics over entitlements fundamentally changed the path and process of regulation in Maharashtra as the bureaucrats and politicians defined the regulatory mandate at the state level.

(3) While the space at the state level was shaped by questions as to who is responsible for regulating water resources and what regulation entails, i.e. defining the jurisdiction of the MWRRA, the boundaries of this regulation became amorphous and were fiercely contested in the Jahot system. Regulation here was subsumed within the discourses of canal mis-management, rehabilitation works, and overlaps and gaps in departmental jurisdiction. However, where bulk water consumers were created (JGP WUA) in the tail, regulation was subsumed as a tactic of discipline and power of the State (see Chapter 8). The very performance of volumetric pricing dismantled the scientific and transparent rationale that underpinned the notions of entitlements and regulation. It also revealed a certain politics of adjustment underlying the calculation and distribution of entitlements, where quotas of other bulk users -supposedly not demanding water- were adjusted with overuse of water in the JGP. This very performance of volumetric pricing and serving the bill articulates a certain politics of knowledge and power.

In the Jahot system, the reform enterprise was shaped by water users and field-level bureaucrats. The embeddedness of the local regulator within the irrigation bureaucracy only made the reproduction of the state machinery into elements of reforms easier; the field bureaucracy was the chief purveyor and implementer of reforms (Chapter 7). It was for this reason that the farmers, head and tail level, very easily associated reforms with the *shaasan*. This overlap also brought into the reforms a 'project type' focus within the bureaucracy, the success of which was calculated on the basis of target completions, exacerbated by the pressure to perform and report (cf. Baviskar, 2004).

This bureaucracy was relationally constituted in two ways. First, though they had a different perception of 'progress', they were helpless in the face of the pressure from Mumbai that neglected the realities and pressures of the field. It was these field officers who had to face the farmers (Chapters 7 and 8). This difference between the elite and vernacular worlds also mediated through political compulsions of the relationship between the *shaasan* and the *sarkaar*. These were visible in the differential management at the head and tail of the system. Second, in a politically rivalrous system such as Jahot, where the strongmen wanted to capture power through the associations (e.g. the cases of Triveni and Balaji WUAs), the small and marginal farmers (in the tail) wanted the bureaucracy to fight for their interests. The image of the State as a neutral arbiter when it comes to enforcing rules governing *apne aadmi* (our people) is considered to be more legitimate than the idea of members of the same community, e.g. a WUA, enforcing the rules (cf. Shah, 2008).

One could argue that this behaviour emanated from the fact that the power of the community had not been realised, as these farmers were tied to a patron-client relationship with the State. But, as I have shown, these communities were neither homogeneous nor powerless. These relationships were constituted in terms of their position in the sugarcane economy of Jahot, their relationship with the Department and also among themselves. These interactions demonstrate the many meanings that regulation takes (Chapter 7) when strategic relationships that are formed over and for water. For example, when the bureaucracy failed to get water to the tail, Vitthal Sudrik (former JGP chairman in Uzalgaon) lost no time before speaking with the minister to get water to the village (Chapter 7). When the May rotations were delayed and the field bureaucracy suspected violence on this account, they ensured that the guardian minister, Mr. Bajirao, addressed a meeting of farmers (from the head) as big landholders were suspected of creating disruptions (Chapter 8). Mr.Bajirao, on the other hand, earned credibility for releasing the water in May. These relationships of reciprocity between the bureaucracy and the politicians define the politics and water cultures in the Jahot system.

These issues not only decentred regulation substantively but also rendered such dichotomies of state-society and formal-informal futile (Chapter 7). Regulation in

the Jahot system was the result of ‘mixing and matching’, or *strategic interactions* of the bureaucracy, the farmers, the political guardians, and the ‘muted’ resistance of the NGOs. The embedded nature of the regulator, bureaucratic supremacy and plural jurisdictions of water underlined the resistance from different domains (the politicians, bureaucracy and the rich landholders) to the elements of reform. Moreover, the disciplinary nature of the State vis-à-vis the choice of what aspects of reforms should be implemented (rehabilitation) or not (entitlements as rights) highlighted its centrality, and its control over water.

Thus this thesis has demonstrated that reform-led regulation was introduced in a particular context constituting different rationalities and corresponding frameworks. While the state systems of federalism, i.e. the institutional assemblage of the water sector, provided the framework and determined the path of regulation, it was also mediated by certain norms of what constituted the very porous idea of the State. These included questions of who had the institutional and democratic prerogative to make certain decisions and enforce them. These frameworks determined not only what was institutionally possible, but also what could become the right cognitive fit in the archaeology of the Indian water sector. At a deeper level, these regulatory cultures operated through the strong and persistent structures of thought and attitude which are considered peripheral to the current reformist discourse of water regulation.

9.2 Pushing the boundaries: implications and future pathways

This thesis has argued that the current process of regulation reform and the understanding of entitlements has so far been extremely narrow and such technical and limited understanding fails to engage with the politically heterogeneous, socially differentiated and ecologically dynamic realities that exist in Maharashtra. This heterogeneity is well tapped into through the concept of regulatory cultures. In this study, I used a policy process approach to unpack the interplay of discourse and practice. While ‘studying through’ had clear advantages of unpacking the mix of intended and unintended effects of the interaction between discourse and practice, it also meant a loss of depth on certain crucial aspects of water management, especially in relation to the interconnections between the diverse sources of water use.

In this study, I have argued that the State becomes the very site around which relationships of power were articulated. Embedded in diverse regulatory cultures that exist at the intersection of the internally heterogeneous layers of bureaucracy, water user associations, sugar cooperatives, and the donor relations, it is the architecture of the Indian State that is central to understanding the politics and practice of the water regulation in Maharashtra. Though, I have placed the State at the centre of the regulation reform, but have tried to steer away from the image of an all-benevolent State. The understanding that the State is not a pre-given entity and is constituted through discourse and practices of actors for different ends is important to understand its effects in the age of neoliberal reforms. Having said this, one must concede that the nature and modalities of State rule may be different in different sectors, and thus it is important to unpack those modalities to understand the corresponding State effects. In this section, I discuss the implications that these findings may have for wider academic and policy debates.

9.2.1 Neoliberalism and Water Reforms

The emergence of independent water regulation is a part of the larger process of neoliberal reforms in India. I have demonstrated how through diverse practices and discourses, the State continues to have a strong presence in this project of neoliberal reforms. The State operates and is constituted through different relationships of collusion and control. Unlike several studies that have focused, on the 'local' manifestations of the State (Mollinga, 2003; Mosse, 2003; Narain, 2003; Shah, 2008), this study looked at the interaction of different domains of the State at different levels, unpacking the power of the State at each of these levels, which may be contradictory or complementary. For example, in the Jahot system, the *shaasan* and the *sarkaar* came together to govern and control practices of water, while they competed with each other as was the case with the politics of amendment at the State level.

In this study, I have emphasised on the understanding the State both as a system and an idea (cf. Abrams, 1988). Several studies on water reforms have highlighted the centralising and the decentralising tendencies embedded in neoliberal reforms. Studies on water privatization in Europe (cf. Bakker 2003, Finger and Allouche, 2002) have understood these neoliberal reforms as a process

of re-regulation whereby the administrative capacities of the State were strengthened through tighter contracts and rule making. In other contexts, such reforms have led to greater bureaucratization such as the WUA reform in Mexico (Rap, 2006) or greater control of the State through maintaining control on the canals, giving water permits, deciding the command area in South Africa (Movik 2012) as well as India (Cullet, 2010).

This study also corroborates with the findings of the works cited above that the process of marketization or commercialisation in the water sector may not allude to distinct binaries of retreat of the State vs. reign of the free market. Instead, reforms have strengthened the capacities of the State, though the techniques of power may vary. What accrues in the process of reforms is far more complex and often results in reconfiguration of the power and the role of the State. For example, the case of water regulation reform in Maharashtra is a powerful example of the bureaucratization of the reforms but is unlike the instances of re-regulation which Bakker (2003) or Finger and Allouche (2002) allude to in their study. Besides looking at the water supply framework, their central argument was regarding tighter rules of contract on the private entities where regulation has followed privatization. In the Indian case, as I highlighted, this trajectory was not only unclear but the motivations and reasons for regulation remained vague (Chapter 4 and 6). The Regulator was associated with the introduction of the market than with the disciplining of the market. This understanding was also at the heart of the entitlements system introduced in Maharashtra. One of the central reasons for this disjuncture was- as this thesis argues- the character and the nature of the State contingent on its post-colonial, developmental forms, which is central to understanding regulation reform as a state project. As much as this thesis has investigated the unfolding of the regulation reform, it has also asked what this reform does to the character of the State and how its powers are reorganised in the process (cf. Bakker 2003)?

However, the focus of this study was not only on the institutional dimensions of the State (policy frameworks and institutions) but also the sightings of the State i.e. how do people associate with the State (Corbridge et al., 2005). Of course these sightings are not uniform and are determined by the particular positions of the actors. While some farmers may see the State as more 'neutral' than their own

kinsmen (cf. Shah, 2008), others may see it as colluding with the powerful (Chapter 7 and 8). The way the State is imagined also determines how it operates in governing the lives of people (Gupta, 1995; Corbridge et al., 2005). Therefore in order to discuss the effects of neoliberalism in a sector with such boundary blurring properties, it also important to look at how certain subjectivities are constituted and subverted throughout the process of reforms and among the actors. Thus, taking such an anthropological approach to the study of the State may help to unravel why the effects of neoliberal reforms have been so haphazard in the water sector.

9.2.2 Regulation and regulatory cultures:

This thesis adopted a decentred and dynamic understanding of regulation (cf. Black, 2002; Zwanenberg, 2011). As this thesis has demonstrated, the discourse(s) and practice of regulation was not limited to the water sector alone. They were often embedded and governed by the larger systems in which water policy and management came to be located. These included, among many other forces, the economic federalisation of the Indian State (chapter 4), the logic of path dependence through the electricity sector (Chapter 6) or the connections between the sugar cooperatives and water user associations (Chapters 5 and 7). By reading regulation, through interconnected networks and processes, this work highlighted the limitations of thinking regulation merely as 'getting the prices right'. This work has showed how regulation is embedded in larger questions of the political economy of development, diverse systems of property rights and relationships of the State with its citizens.

Thus in this study, regulation becomes a product of discourses and practice, the interaction of different domains, which cross spaces and scales. Such a dynamic understanding of regulation displaces the idea of a steady and de-politicised process. It recasts regulation more as a domain of interaction, which is in-turn governed by larger processes and may not be limited to the specific sector. Besides, reading regulation as an embedded and interconnected process, this study also placed a strong emphasis on the importance of framing regulation- who frames regulation, when, how and under what conditions. For example, even the civil society actors had different perspectives on regulation (Chapters 4 and 6). What emerges from this study is that the answers to such questions are neither

neat nor clear as the meanings of regulation are necessarily plural and are also the product of a certain politics of knowledge (see Chapter 4 and 6).

Reading regulation through such interconnected processes and relationships of power may be useful in unpacking the dynamics of *translation* of reforms in other sectors and contexts. This understanding may also help "broadening out and opening up the multiple pathways" (Leach et al., 2010: 172) that emerge during the course of reforms, and need to be tapped into to strengthen the debate on rights and accountability.

Such understanding of regulation is central to the conceptualisation of regulatory cultures that is "the contested process of meaning making" (Wright, 1998: 9). Unlike other studies on regulation which explicitly focus on decision making aspects (Hancher and Moran, 1989b; Dubash and Rao, 2008; Chng, 2013; Uruena, 2013), I have argued in favour of plural regulatory spaces whereby decisions are made, regulatory bargaining occurs, and where regulation is framed and contested as a practice. I have thus argued for an anthropological and decentred understanding of regulation, which is not limited to institutional sites or aspects of decision making but looks at the discursive and material aspects of regulation. These, in turn, determine why plural regulations evolve through a seemingly singular economic idea of regulation reform. Such an understanding of regulatory cultures does not keep the Regulator at the centre of its analysis but analyses how different domains of regulation interact and lead to plural meanings and courses of regulation.

9.2.3 The blurring of the regulatory state

By reading the State through an anthropological lens, this study has provided a nuanced understanding of the post-colonial, regulatory state in the South, which is far more embedded and dispersed than what a limited neoliberal understanding would have us believe. This study began from the premise that regulation as a concept has evolved from the classic case of typical state based intervention to the neoclassical case of independent regulatory authorities, which I locate as a typical form of neoliberal governance or roll out neoliberalism (Chapter 2). Amidst these two contrasting positions of direct state intervention in the market for promotion of public good (cf. Glaeser and Shleifer, 2003) and retreat of the

State for promotion of market (cf. Majone 1997), I locate the Indian case of water regulation reform. While independent regulation, in this study, is understood as non-State regulation (Chapter 4) in the context of the Indian water sector reforms, I argue that it does inadvertently become State based regulation through different discourses and practices of the State. However where this study does deviate from both these 'classic' (state-based and neoliberal) models is in the anthropological understanding of the State itself.

In the neo-classical version, the regulatory State operates on a neat dichotomy of service provider and regulator (Majone, 1997). I have demonstrated that this dichotomy gets increasingly blurred in the Indian water sector. For example, the MWRRA itself was principally carved out of the bureaucratic establishment of the Department and the state bureaucracy (Chapter 6), and from within the Department at the local level (Chapter 7). This led to the peculiar situation where the State led MWRRA was regulating the State led Department in the water sector.

This raises several questions: Is an 'independent' regulator required in the water sector? More fundamentally – is the decoupling of roles as envisaged in the regulation reform even possible? For example, in the water regulation reform, the Regulator came from within the Department, and the WUAs became both the bulk consumers of water for the Department and service providers for the individual farmers at the same time. As I have argued in Chapters 7 and 8, these overlaps had significant implications for issues of accountability and access to water. These questions also have significant bearing on the relevance and long term implications of privatization of service delivery and issues of accountability in a resource set up (cf. Bakker 2003) where the State is assumed to retreat and take up the function of regulatory oversight.

Moreover, such examples of state regulating the state are not unique to the water sector (see Dubash, 2013) or the case of Southern contexts (Prado, 2013). In a recent study on water regulation in the UK, Walker (2014) has shown that despite several decades of regulatory reform in the UK, the argument for efficiency and competition so intrinsic to advocacy of regulation may be limited due to the institutional and governance specificities of water. Certainly, the regulatory state

in the Northern contexts as an institutional apparatus has had its own historical and contextual specificities (Vogel, 1996), and there may be some convergence of effects between the North and the South. This study has highlighted how a pre-given idea of the regulatory State is reshaped in the process of reforms in the context of the global South

The donor diffusion of regulation reform does add an extra caveat in the process of water regulation reform in the global South (Dubash and Morgan, 2013b). This aspect does change the dynamics of reforms in the global South as we see in the case of Maharashtra where the regulation reforms was initiated through the World Bank funded MWSIP. Nevertheless, this study highlights that the case of 'donor effect' in the *translation* of such reforms need not be overstated. Though water reforms in much of the global South have been introduced through direct or indirect donor pressure, they have often had varying results as is demonstrated in the case of Maharashtra. Entitlements which lay at the heart of the regulation reform and were put in place to introduce market oriented reforms became the very ground to exercise political (Chapter 6) and bureaucratic power (Chapters 7 and 8). For example, this study shows that though the introduction of water regulation in India was credited to the MWSIP, but it was essentially the actors outside of the World Bank who *strategically* shaped the path and process of the regulation reform in Maharashtra as the Bank's role receded in the face of politics within the state. This contest for power also had corresponding effect on the way the regulatory state was constituted and subsequently blurred in the unfolding of reforms.

9.2.4 Going beyond the canal: 'Opening up' spaces for justice and developing synergies

It may appear rather strange to be talking about justice in a study on water regulation when the regulation reform was not explicitly designed for the purposes of justice. It only did come remotely close to the concept by stressing that improved efficiency will ensure equity in distribution, and revising water rotations on a tail to head basis. However, this thesis has demonstrated that this understanding works on several assumptions of homogeneity, improved systems, benevolent bureaucracy and apolitical relationships which are difficult to relate to in field situations (Chapters 7 and 8). At the same time this thesis has also argued

that the effects of this neoliberal intervention are both complementary and contradictory (Sangameswaran, 2011). By studying water regulation as a site of practice, this study showed how the regulation reform opened up spaces for negotiation and contestation. These contestations touched upon questions of accountability, democratic propriety, and regional development of the State (Chapters 4 and 6). Thus, despite the inherent market logic of this neoliberal regulation reform, the contestation around regulation reform does open several spaces for articulation of water justice.

Regulation thus became a site of practice whereby a hitherto closed water sector was opened to critical public scrutiny. The meetings in the MWRRA office on water trading, the tariff consultations, the protests and the sit-ins (see Chapter 6) not only highlighted the competing frames of regulation but also underlined that such spaces of empowerment and accountability may open up (cf. Corbridge et al., 2005; Dubash, 2013).

Thus understanding resource regulation as a contested and negotiated process of water allocation, as this thesis has done, may help in unpacking regulation in other areas such as groundwater, lifts and drinking water which sit in different administrative silos but are used in different combination to sustain irrigation needs. The hydraulic boundaries of irrigation most often do not coincide with the administrative boundaries of water regulation (Chapter 8). Moreover, these divergent sources of water also come under jurisdictions of different administrative sub-divisions, which also tend to create false boundaries between resource and supply functions. For instance, rural water supply is most often placed under the jurisdiction of the local governments and WUAs are meant explicitly for irrigation water (see Upadhyaya, 2006) However, as verified in the case of scarcity rotation in Jahot (Chapter 8), farmers do use canal water for domestic needs on top of irrigation.

It is evident from the case of Maharashtra that a resource regulator turned out to be an irrigation sector regulator for various reasons (see Chapter 6) and more so, restricted to the uses of water from the canal. For example, the narrow definition of entitlements as use rights on canal water overlooked the diverse property rights and use(s) of water that pre-dated the reforms in the Jahot system. Thus, the

effects of the block system, made entitlements politically and economically unattractive to the rich farmers in the head WUAs (demonstrated in the case of Balaji and Triveni in Chapter 7). It lacked incentive and appeal to farmers on lift irrigation in the Sangam WUA. The overlapping regimes of water in Jahot, which allowed certain farmers to draw water from diverse sources, were a serious impediment to the constitution of bulk water users. Furthermore, the fact that irrigation water is tied to land ownership already limited the sphere of water entitlements (Chapters 7 and 8) for the landless and other livelihood options.

This distorted the entitlement system in different ways. This also raised question regarding institutionalisation of regulation i.e. whether it is pertinent to have 'one in all regulator' for the water sector or multiple regulators for different sectors and purposes (as in the UK) where three regulators work with the Department of the Environment, Food and Rural Affairs (cf. Bakker, 2003). Within the federal set up of India, such regulatory bodies in the water sector may not be possible (see Chapter 4) and a basin approach with a basin regulator might make more sense than having a centralised regulator. This may also enlarge the scope and meaning of entitlements for various categories of uses, purposes, and sources where entitlements are granted as use rights for multiple purposes than merely restricting it to the purpose of irrigation.

Reforms do not begin on a blank slate, they embed themselves into institutional cultures of prevailing regimes and require political and administrative constituency in doing so. Therefore a more nuanced process may be more fruitful than a sudden, big-bang approach. Developing synergies between the existing local institutions (such as the Panchayats and the WUAs; see Upadhyaya 2006) and government departments may help in making water regulation reform more inclusive from a resource perspective, and this may also encompass the different meanings and uses of water.

9.2.5 Scarcity and water reforms

Scarcity is one of the key narratives that have fuelled the need for reforms the world over (Movik, 2012), and the case of regulation reform, as this study demonstrated, was no exception to this rule. Regulation was a managerial response to mitigate this scarcity by providing water through predetermined

entitlements leading up to water markets, and tariffs (World Bank 2005; Briscoe and Malik, 2006). I have referred to this as the economic approach to regulation, and thus argued that such narrow framing limits the way in which the problems in this sector are defined and solutions pursued. For example, the entitlements were conceptualised on certain universalised notions of scarcity (Chapter 4 and 6), which eventually fed into technical responses through entitlements via volumetric pricing. Such technical responses are misleading and often result in oversimplification of complex realities. This in turn results in misdirected mitigation measures as is also evident in politics of drought (cf. Mehta, 2005) and watershed management (cf. Bharucha et al., 2014)

At various points in this thesis, I have shown how scarcity is constructed (cf. Mehta, 2005) rather than limited to biophysical aspects (Chapters 7 and 8). The uneven topography of Maharashtra (especially the Deccan trap) does make it a water-scarce state in the biophysical sense. However, in the present context of reforms, the nature of scarcity is defined by the gridlock of competing scarcities: water for industry vs. water for irrigation; water for sugarcane vs. water for jowar; water for irrigation vs. water for life (scarcity rotation), which have exacerbated the water conflicts (Chapter 6). In this context, a purely economic rationale, which comes with the entitlements, is fairly limited by the context in which it needs to be implemented. Moreover restricting the definition of entitlements to canal water also ignored the other sources of water, especially the groundwater and lifts which have-for now- become proxy for mitigating canal water scarcity.

The formal definition of entitlements has steered clear of defining what scarcity means in such a competing context, and where scarcity is naturalised due to intersectoral or intrasectoral conflicts. Thus this limited definition of scarcity is in opposition to the political framing of scarcity. In the current conceptualisation of entitlements, scarcity has been treated in absolute sense i.e. year of below normal rainfall or a period of water shortage declared by the state government (Government of Maharashtra, 2007). However, the case of May rotations has amply demonstrated how water released in the name of drinking was used for irrigation purposes (Chapter 8). By leaving entitlements to administrative and technical rule, the systems of power that induce and reproduce scarcity are

overlooked For example, Mr. Navade's claim (in Chapter 7) that "scarcity means no water for sugarcane to a head-end farmer, and no water for drinking to a tail-end farmer" (KI51) amply demonstrates the competing claims on water that not only stem from diverse uses of water but also different meanings that are attributed to water and more specifically the unequal relations of access to irrigation water due to the agrarian patters and relations.

So, when does water become 'scarce' for a particular set of actors? The answer is deeply embedded in the local narratives of water and scarcity. Scarcity needs to be defined in relation to human needs, practices, institutions and technologies (cf. Harvey, 1996). In this light, a more nuanced and dynamic understanding of entitlements may be required which not only highlights the diverse uses of water, but also has in-built measures for mitigating effects of induced scarcity.

This question is extremely important when droughts and uncertain hydrological cycles are becoming increasingly rampant not only in India but the world over. In this context, it is important to have an empowering understanding of entitlements to address issues of livelihoods and access. This study has highlighted several limitations regarding the concept of entitlements, some inherent in its conceptualisation (Chapters 4 and 6), and others determined by the context (Chapters 7 and 8). The livelihood perspective on entitlements, which privileges both the productive and domestic uses of water, is one such example of this articulation (Chapter 6). The livelihood perspective is similar to the Multiple Use Services approach, which is grounded in the understanding that water supply systems can be used for purposes other than irrigation. This may include livestock rearing, washing and home gardens, etc. (Van Koppen et al., 2006; also see Joy et al., 2014). In several parts of the world, entitlements for the environment are also gaining strong currency (for example: in Australia and South Africa). There is thus an urgent need to have holistic perspective on entitlements which are mindful of the several dimensions of scarcities, multiple uses and meaning of water and the human and non-human stakeholders of water and their interlinkages.

9.3 Conclusion

This work has analysed the dynamics of reform-led regulation up to 2012. In the last two years several changes have taken place in the landscape of Maharashtra as well as India. The World Bank project which led to the ushering in of 'the regulatory age' in Maharashtra came to its end in March 2014. The River Basin Agencies, which were supposed to be the restructured Departments to operate as water service agencies have not been introduced. After a brief period of staff shortage and lack of appropriate quorum, the MWRRA now has a set of appointed members. The MANCH, as I last learnt, has now begun to focus on the Department rather than the Regulator for demanding action in the water sector.

The Regulator has, since 2012, given verdicts on industrial use of water, and the diversion of agricultural water to drinking[129]. While there is a persistent effort to re-frame the regulatory discourse and understand the rationale and practical limits of water regulation in India, there are three streams of enquiry that emanate from this study for future work: studying how groundwater regulation interacts with the current framework of water regulation in India, studying regulatory discourse and practice in a post-MWSIP world, and analysing how regulatory learning works through a cross sectoral study of electricity and water regulators. Furthermore, it may be useful to analyse how the functions and practice of the Regulator are evolving in this 'new' context. This is particularly imperative in the background of rising water conflicts, illicit cases of grabs, which are naturalising and reshaping water scarcity in Maharashtra.

I began this study with the motivation to understand what neoliberal reforms do to patterns of authority and how reformist ideas are constructed and contested across this process. I have shown how the boundaries and content of water regulation is mediated by histories, contingency of interests, politics and institutional frameworks, whereby water regulation takes different meanings in different contexts. This study has also shown how a technical and seemingly apolitical initiative becomes the very ground for articulation of State control. I have thus argued how water regulation, as a deeply political process, is embedded in the networks and discourses of power.

[129] www.mwrra.org

Regulation emerged in the Indian water sector as a deeply ambiguous concept, especially as it came through the process of reform diffusion. Now that the MWSIP project has come to an end, and regulation is increasingly getting mainstreamed in water policy discourses, what does this mean for the future of water regulation reform in India? During fieldwork as well as in course of writing up this thesis, I have wondered if a non-Bank stamp could have salvaged the MWRRA and given it more legitimacy especially in the eyes of civil society? Would civil society activists then rally for a stronger regulator to protect illegal water diversions and water grabs? Furthermore, given the peculiarities of the water sector, is an independent water regulator an appropriate mechanism for this sector? I do not claim that this thesis has provided answers to these questions. Nevertheless, this study has revealed that regulation of water is embedded in diverse rules that have developed over time in the water sector and the regulation reform targeted only one and a limited aspect of this rulemaking and maintenance. The demand for the reduced State, by way of reforms, may achieve little constituency in a context where the State is constituted through multiple social and institutional relationships. The demand instead needs to be made for a State that is more responsive and accountable to the needs of the poor and marginalised sections (cf. Li, 1996). Understanding water regulation as a dynamic process that cuts across systems, across networks of actors and their divergent frames may bring greater insights, and open up spaces for leveraging accountability in this State led sector. This thesis is a contribution in that direction.

****

10.References

Abrams, P. (1988) Notes on the Difficulty of Studying the State (1977). *Journal of Historical Sociology,* 1 (1)**,** 58-89.

Agarwal, A. (2005) *Environmentality: technologies of government and the making of subjects.* Durham: Duke University Press.

Agarwal, A. & Narain, S. (1989) *Dying Wisdom: rise, fall and potential of India's traditional water harvesting systems.* New Delhi: Centre for Science and Environment.

Akerlof, G.A. (1970) The Market for "Lemons": Quality Uncertainty and the Market Mechanism. *The Quarterly Journal of Economics,* 84 (3)**,** 488-500.

Amit, V. (ed.) (2000) *Constructing the Field: Ethnographic Fieldwork in the Contemporary World,* London Routledge.

Appadurai, A. (1990) Disjuncture and Difference in the Global Cultural Economy. *Public Culture,* 2 (2)**,** 1-24.

Apthorpe, R. (1996) Reading development policy and policy analysis: On framing, naming, numbering and coding. *European Journal of Development Research,* 8 (1)**,** 16-35.

Asthana, V. (2009) *Water Policy Processes in India: Discourses of power and Resistance.* Oxon: Routledge.

Attwood, D.W. (1985) Peasants versus Capitalists in the Indian Sugar Industry: The Impact of the Irrigation Frontier. *The Journal of Asian Studies,* 45 (1)**,** 59-80.

Attwood, D.W. (1987) Irrigation and imperialism: The causes and consequences of a shift from subsistence to cash cropping. *The Journal of Development Studies,* 23 (3)**,** 341-366.

Attwood, D.W. (1992) *Raising Cane: The Political Economy of Sugar in Western India.* Oxford: Westview Press.

Attwood, D.W. (2005) Big is ugly? How large-scale institutions prevent famines in Western India. *World Development,* 33 (12)**,** 2067-2083.

Bachrach, P. & Baratz, M.S. (1962) Two Faces of Power. *The American Political Science Review,* 56 (4)**,** 947-952.

Bakker, K. (2003) *An Uncooperative Commodity:Privatizing Water in England and Wales*. Oxford: Oxford University Press.

Bakker, K. (2005) Neoliberalizing Nature? Market Environmentalism in Water Supply in England and Wales. *Annals of the Association of American Geographers,* 95 (3)**,** 542-565.

Bakker, K. (2010) *Privatizing Water: Governance Failure and the World's Urban Water Crises.* Ithaca: Cornell University Press.

Bakker, K. (2013) Neoliberal Versus Postneoliberal Water: Geographies of Privatization and Resistance. *Annals of the Association of American Geographers,* 103 (2)**,** 253-260.

Baldwin, R.E. & Cave, M. (1999) *Understanding Regulation:theory, strategy and practice.* Oxford: Oxford University Press.

Bardhan, P.K. (1998) *The political economy of development in India.* New Delhi: Oxford University Press.

Bardhan, P.K. (2005) *Scarcity, Conflicts and Cooperation: Essays in the Political and Institutional Economics of Development.* Cambridge: MIT Press.

Barlow, M. & Clarke, T. (2003) *Blue Gold: The Fight to the Corporate Theft of the World's Water.* New York: The New Press.

Basu, D.D. (2009) *Introduction to the Constitution of India.* Nagpur: LexisNexis.

Bauer, C.J. (1997) Bringing water markets down to earth: the political economy of water rights in Chile, 1976–1995. *World Development,* 25 (5)**,** 639-656.

Baviskar, A. (2004) Between micro-politics and administrative imperatives: Decentralisation and the watershed mission in Madhya Pradesh, India. *The European Journal of Development Research,* 16 (1)**,** 26-40.

Baviskar, A., (2007) Introduction. *In* A. Baviskar ed. *Waterscapes: The Cultural Politics of a Natural Resource.* Ranikhet: Permanent Black, 1-8.

Baviskar, B.S. (1980) *The Politics of Development: Sugar Cooperatives in Rural Maharashtra.* Bombay: Oxford University Press.

Baxi, U. (1985) Taking suffering seriously: Social action litigation in the Supreme Court of India. *Third World Legal Stud.***,** 107.

Beale, H.F. (1909) *Report on the Surveys for Protective Irrigation Works in the Deccan.* Bombay: Office of the Chief Engineer (Bombay Presidency).

Bharucha, Z.P., Smith, D & Pretty, J. (2014) All Paths Lead to Rain: Explaining why Watershed Development in India Does not Alleviate the Experiences of Water Scarcity. The Journal of Development Studies, 50 (9), 1209-1225.

Black, J. (2001) Decentring Regulation: Understanding the Role of Regulation and Self-Regulation in a 'Post-Regulatory' World. *Current Legal Problems,* 54 (1)**,** 103-146.

Black, J. (2002) Critical Reflections on Regulation. *Australian journal of legal philosophy,* 27**,** 1-35.

Bolding, A., Mollinga, P.P. & Van Straaten, K. (1995) Modules for modernisation: Colonial irrigation in India and the technological dimension of agrarian change. *The Journal of Development Studies,* 31 (6)**,** 805-844.

Bourdieu, P., Wacquant, L.J.D. & Farage, S. (1994) Rethinking the State: Genesis and Structure of the Bureaucratic Field. *Sociological Theory,* 12 (1)**,** 1-18.

Braithwaite, J. (2006) Responsive Regulation and Developing Economics. *World Development,* 34 (5)**,** 884-898.

Braithwaite, J., Coglianese, C. & Levi-Faur, D. (2007) Can regulation and governance make a difference? *Regulation and Governance,* 1**,** 1-7.

Braithwaite, J. & Drahos, P. (2000) *Global Business Regulation.* Cambridge: Cambridge University Press.

Brara, R., (2007) The Public Sphere and Water Provisioning: Discontinuities in the Present. *In* A. Baviskar ed. *Waterscapes: The Cultural Politics of a Natural Resource.* Ranikhet: Permanent Black, 117-138.

Brewer, J.D. & Raju, K.V. (1995) *Status of Irrigation Management transfer in India: Irrigation Management Transfer Policies and Law.* Colombo: International Irrigation Management Institute.

Briscoe, J. (2005) Those taps needn't run dry. *The Times of India,* 10 October.http://articles.timesofindia.indiatimes.com/2005-10-10/edit-page/27837688_1_water-rights-water-conflicts-cities-and-farmers [Accessed 25/12/11].

Briscoe, J. & Malik, R.P.S., (2006) India's water economy: bracing for a turbulent future. New Delhi: Oxford University Press.

Briscoe, J. & Malik, R.P.S., (2007) India's Water Economy: An Overview. *In* J. Briscoe & R.P.S. Malik eds. *Handbook of Water Resources in India: Development, Management, and Strategies.* New Delhi: Oxford University Press, 1-9.

Case no. 3 of 2010, (2010) Professor N.D.Patil and others v. Chief Engineer Konkan region(WRD) and others: Petition against the Distribution Plan of Water from Hetavne Medium Irrigation Project, District Raigad. *Maharashtra Water Resources Regulatory Authority.* Mumbai.

Castree, N. (2005) The epistemology of particulars: Human geography, case studies and 'context'. *Geoforum,* 36 (5)**,** 541-544.

Chambers, R. (1988) *Managing Canal Irrigation: Practical Analysis from South Asia.* Cambridge: Cambridge University Press.

Chang, H.-J. (1997) The economics and politics of regulation. *Cambridge Journal of Economics,* 21 (6)**,** 703-728.

Chatterjee, P., (1998) Development Planning and the Indian State. *In* T. J.Byres ed. *The State and Development Planning in India.* Delhi: Oxford University Press, 82-103.

Chatterjee, P. (2004) *The Politics of the Governed: Reflections on Popular Politics in Most of the World.* New York: Columbia University Press.

Chithelen, I. (1985) Origins of Co-operative Sugar Industry in Maharashtra. *Economic and Political Weekly,* 20 (14)**,** 604-612.

Chng, N.R., (2013) Regulatory Mobilization and Service Delivery at the edge of the Regulatory State. *In* N.K. Dubash & B. Morgan eds. *The Rise of the Regulatory State of the South: Infrastructure and Development in Emerging Economies.* Oxford: Oxford University Press, 163-181.

Chopra, D. (2011) Policy Making in India: A Dynamic Process of Statecraft. *Pacific Affairs,* 84 (1)**,** 89-107.

Cleaver, F. (2000) Moral Ecological Rationality, Institutions and the Management of Common Property Resources. *Development and Change,* 31 (2)**,** 361-383.

Cleaver, F. (2012) *Development Through Bricolage: Rethinking Institutions for Natral Resource Management.* London: Routledge.

Coelho, K., (2004) Of Engineers, Rationalities and Rule: An Ethnography of Neoliberal Reforms in an Urban Utility in South India. PhD thesis. University of Arizona, USA.

Coelho, K., (2010) The Slow Road to Private: A Case Study of Neoliberal Water Reform in Chennai. *In* P. Cullet, A.G. -Gualtieri, R. Madhav & U. Ramanathan eds. *Water Governance in Motion.* New Delhi: Cambridge University Press, 80-108.

Corbridge, S., Williams, G., Srivastava, M. & Veron, R. (2005) *Seeing the State: Governance and Governmentality in India.* Cambridge: Cambridge University Press.

Cornwall, A., (2004) Spaces for transformation? reflections on issues of power and difference in participation in development. *In* S. Hickey & G. Mohan eds. *Participation: from tyranny to transformation.* London: Zed Books, 75-91.

Croley, S.P. (1998) Theories of Regulation: Incorporating the Administrative Process. *Columbia Law Review,* 98 (1)**,** 1-168.

CTARA, Prayas & TISS, (2009) Water Sector IRAs and Institutional Reforms in India: Proceedings of the National Workshop on Independent Regulatory

Authorities (IRA) and Related Institutional Reforms in the Water Sector in India. Pune: Prayas.

Cullet, P., (2010) Water Law: Evolving Regulatory Framework. *In* P. Cullet, A.Gowlland-Gualtieri, R. Madhav & U. Ramanathan eds. *Water Governance in Motion: Towards Socially and Environmentally Sustainable Water Laws.* New Delhi: Cambridge University Press India Pvt. Ltd., 26-52.

Cullet, P. (2012) Is Water Policy the New Water Law? Rethinking the Place of Law in Water Sector Reforms. *IDS Bulletin,* 43 (2)**,** 60-69.

Cullet, P., Gowlland-Gualtieri, A. & Madhav, R., (2010) Introduction. *In* P. Cullet, A. Gowlland-Gualtieri, R. Madhav & U. Ramanathan eds. *Water Law for the Twenty-First Century: National and International Aspects of Water Law Reform in India.* Oxon: Routledge, 1-7.

CUTS International (2010) *PARFORE: A Discussion on the Draft Regulatory Reform Bill.* New Delhi: Cuts International.

D'Souza, R. (2006) Water in British India: The Making of Colonial Hydrology. *History Compass,* 4 (4)**,** 621-628.

Dandekar, A. & Naravade, S. (2013) The Case for Maharashtra's Disappearing Water. *Economic and Political Weekly,* XLVIII (18)**,** 19-21.

de Certeau, M. (1984) *The practice of everyday life.* Berkeley: University of California Press.

DeSouza, A. (2010) *Water and Development: Forging Green Communities for Watersheds.* New Delhi: Orient Blackswan.

Dharmadhikary, S. (2007) A flawed model for water regulation. *India Together*, 23 May.www.indiatogether.org/2007/may/env-mwrra.htm [Accessed 04/04/10].

Dharmadhikary, S. (2008) *The World Bank as a Knowledge Producer: How the Bank uses Flawed Processes to Generate Unsound Knowledge for Promoting Disastrous Policies.* Badwani (Madhya Pradesh): Manthan Adhyayan Kendra.

DiMaggio, P.J. & Powell, W.W. (1983) The Iron Cage Revisited: Institutional Isomorphism and Collective Rationality in Organizational Fields. *American Sociological Review,* 48 (2)**,** 147-160.

Dixit, S., Sant, G. & Wagle, S. (1998) WB-Orissa Model of Power Sector Reform: Cure Worse than Disease. *Economic and Political Weekly,* 33 (17)**,** 944-949.

Douglas, M. (1986) *How Institutions Think.* New York: Syracuse University Press.

Dubash, N.K. (2008) The Role of Independent Regulatory Agencies in Governance: A Brief Theoretical Review with the Application to the Electricity and Water in India. *Economic and Political Weekly*, 43 (40)**,** 43-54.

Dubash, N.K. (2010) Will the regulatory bill work? *The Business Standard*, 9 June.http://www.business-standard.com/article/opinion/will-the-regulatory-bill-work-110060900080_1.html [Accessed 10 /06/10].

Dubash, N.K., (2013) Regulating Through the Black Door: Understanding the Implications of Institutional Transfer. *In* N.K. Dubash & B. Morgan eds. *The Rise of the Regulatory State of the South: Infrastructure and Development in Emerging Economies.* Oxford: Oxford University Press, 98-114.

Dubash, N.K. & Morgan, B. (eds.) (2013a) *The Rise of the Regulatory State of the South,* Oxford University Press: Oxford.

Dubash, N.K. & Morgan, B., (2013b) The Rise of the Regulatory State of the South. *In* N.K. Dubash & B. Morgan eds. *The Rise of the Regulatory State of the South: Infrastructure and Development in Emerging Economies.* Oxford: Oxford University Press, 1-23.

Dubash, N.K. & Rao, D.N. (2008) Regulatory practice and politics: Lessons from independent regulation in Indian electricity. *Utilities Policy,* 16 (4)**,** 321-331.

Ekers, M. & Loftus, A. (2008) The power of water: developing dialogues between Foucault and Gramsci. *Environment and Planning D: Society and Space,* 26 (4)**,** 698-718.

Enthoven, R.E. (1909) *Imperial Gazetteer of India, Provincial Series: Bombay Presidency (1909).* Calcutta: Office of the Superintendant of the Government Printing.

EPW (1987) Maharashtra-Politics of Irrigation Water. *Economic and Political Weekly,* 22 (24)**,** 913.

Escobar, A. (1995) *Encountering Development: The Making and Unmaking of the Third World.* Princeton: Princeton University Press.

Esmail, T. (1997) *Decentralisation, Fiscal Systems and Rural Development Programme.* Washington D.C.: World Bank.

Fairhead, J. & Leach, M. (1996) *Misreading the African landscape: society and ecology in a forest-savanna mosaic.* Cambridge: Cambridge University Press.

Fairhead, J. & Leach, M. (2003) *Science, Society and Power: Enviornmental Knowledge and Policy in West Africa and Carribean.* Cambridge: Cambridge University Press.

Ferguson, J. (1990) *The Anti-Politics Machine: "Development," Depoliticization, and Bureaucratic Power in Lesotho.* London: University of Minnesota Press.

Ferguson, J. & Gupta, A. (2002) Spatializing States: Toward an Ethnography of Neoliberal Governmentality. *American Ethnologist,* 29 (4)**,** 981-1002.

Finger, M. & Allouche, J. (2002) *Water Privatization: Trans-National Corporations and the re-Regulation of the Water Industry.* London: Spon Press.

Fischer, F., (1993) Policy Discourse and the Politics of Washington Think Tanks. *In* F. Fischer & J. Forester eds. *The Argumentative Turn in Policy Analysis and Planning.* Durham: Duke University Press, 21-42.

Fischer, F. & Forester, J., (1993) Editors' Introduction. *In* F. Fischer & J. Forester eds. *The Argumentative Turn in Policy Analysis and Planning.* Durham: Duke University Press, 1-17.

Foucault, M. (1982) The Subject and Power. *Critical Inquiry,* 8 (4)**,** 777-795.

Foucault, M., (1991) Governmentality. *In* G. Burchell, C. Gordon & P. Miller eds. *The Foucault Effect: Studies in Governmentality.* Chicago: University of Chicago Press, 87-104.

Fuller, C.J. & Harris, J., (2001) For an Anthropology of the Modern Indian State. *In* C.J. Fuller & V. Benei eds. *The Everyday State & Society in Modern India.* London: C. Hurst & Co. (Publishers) Ltd., 1-30.

Gadgil, D.R. (1948) *Economic effects of irrigation: Report of a survey of the direct and indirect benefits of the Godavari and Pravara canals.* Poona: Gokhale Institute of Politics and Economics.

Garland, D. (1997) `Governmentality' and the Problem of Crime:: Foucault, Criminology, Sociology. *Theoretical Criminology,* 1 (2)**,** 173-214.

Gazmuri, R.S. & Rosegrant, M. (1996) Chilean water policy: The role of water rights, institutions, and markets. *International Journal of Water Resources Development,* 12 (1)**,** 33-48.

Gilardi, F., (2003) Institutional change in regulatory policies: Regulation through independent agencies and the three new institutionalisms. *In* J. Jordana & D. Levi-Faur eds. *The Politics of Regulation: Institutions and Regulatory Reforms for the Age of Governance* Cheltenham: Edward Elgar, 67-89.

Glaeser, E.L. & Shleifer, A. (2003) The Rise of the Regulatory State. *Journal of Economic Literature,* 41 (2)**,** 401-425.

Gorriz, C.M., Subramanian, A. & Simas, J. (1995) *Irrigation Management Transfer in Mexico: Process and Progress.* Washington D.C: World Bank.

Government of India, (1950) The Constitution of India (as amended till date). New Delhi: Ministry of Law and Justice.

Government of India (1987) *National Water Policy.* New Delhi: Ministry of Water Resources.

Government of India (1992) *Report of the Committee on Pricing of Irrigation Water*. New Delhi: Planning Commission.

Government of India (1995) *District Census Handbook: Ahmadnagar.* Mumbai: Government Central Press.

Government of India (2002) *National Water Policy.* New Delhi: Ministry of Water Resources.

Government of India (2006) *Paper on "Approach to Regulation: Issues and Options"*. New Delhi: Planning Commission.

Government of India (2009) *Thirteenth Finance Commission (2010-2015): Volume 1*. New Delhi: Finance Commission of India.

Government of India (2010a) *Commission on Centre-State Relations Report: Environment, Natural Resources and Infrastructure (Volume 6).* New Delhi: Commission on Centre-State Relations.

Government of India (2010b) *Commission on Centre-State Relations: Centre-State Financial Relations and Planning.* New Delhi: Commission on Centre-State Relations.

Government of India (2010c) *Draft Regulatory Reform Bill 20**: Draft for Discussion.* New Delhi: Planning Commission.

Government of India (2011) Approach Paper to Model Bill for State Water Regulatory System Act. *Sub Group on Model Bill for State Water Regulatory Act (Water Governance Group).*

Government of India (2012a) *Economic Survey 2011-2012: Statistical Appendix.* New Delhi: Ministry of Finance.

Government of India (2012b) *National Water Policy 2012.* New Delhi: Ministry of Water Resources.

Government of India (2012c) *Twelfth Five Year Plan:(2012–2017) Faster, More Inclusive and Sustainable Growth.* New Delhi: Planning Commission.

Government of India (2013) *Report of the Committtee for Drafting of National Framework Law*. New Delhi: Ministry of Water Resources.

Government of Maharashtra, (2002) Human Development Report Maharashtra 2002. Mumbai: Mumbai Central Press.

Government of Maharashtra (2003) *Maharashtra State Water Policy.* Mumbai: Water Resources Department.

Government of Maharashtra, (2005a) Maharashtra Management of Irrigation System by Farmers Act, 2005 (Mah. Act No. XXIII of 2005). Mumbai: Central Government Press.

Government of Maharashtra, (2005b) Maharashtra Water Resources Regulatory Authority Act 2003 (Mah. Act No. XVIII of 2005). Mumbai: Government Central Press.

Government of Maharashtra, (2005c) Maharashtra Water Sector Improvement Project: Project Implementation Plan (Executive Summary). Mumbai: Water Resources Department.

Government of Maharashtra, (2006a) *Laghuvitrika Stareeya Paani Waapar Sanstha Kararnama* [Minor Level Water User Association MoU]. Pune: Water Resources Department.

Government of Maharashtra, (2006b) Proposal for Bulk Water Entitlement of Ghod Project. Mumbai: MWRRA.

Government of Maharashtra, (2007) Maharashtra Water Resources Regulatory Authority: Technical Manual for Fixing, Regulating and Enforcing the Entitlements in Irrigation Projects (Pilot basis). Mumbai: MWRRA.

Government of Maharashtra, (2008) Minutes of the Meeting held of the HPC held on 21/02/2008. Mumbai: Water Resources Department.

Government of Maharashtra, (2009) *Laghuvitrika Stareeya Paani Waapar Sanstha Hastantarn Kagdepatre* [Minor level WUA handing over document]. Pune: Water Resources Department.

Government of Maharashtra (2011a) *Economic Survey of Maharashtra 2010-2011.* Mumbai: Directorate of Economics and Statistics (Planning Department).

Government of Maharashtra, (2011b) L.A. Bill No. of 2011 (A Bill to amend the the Maharashtra Water Resources Regulatory Authority Act. 2005) and motions referrring the Bill to Joint Committee. Mumbai: Maharashtra Legislative Council.

Government of Maharashtra, (2011c) Maharashtra Water Resources Regulatory Authority (Amendment and Continuance) Act, 2011(Mah. Act No. XXI of 2011). Mumbai: Government Central Press.

Government of Maharashtra, (2011d) Maharashtra Water Resources Regulatory Authority (Amendment) Ordinance (Ordinance No. II of 2010). Mumbai: Government Central Press.

Government of Maharashtra, (2011e) Motion for Disapproval of Ordinance No.II of 2011 (An Ordinance to amend the Maharashtra Water Resources Regulatory Authority Act, 2005) and L.A. Bill No.1 of 2011 (A Bill to amend the Maharashtra Water Resources Regulatory Authority Act, 2005) and Motions for referring the Bill to Joint Select Committtee .Volume 159 (2). Mumbai: Maharashtra State Assembly.

Government of Maharashtra (2012) *Economic Survey of Maharashtra 2012-2013.* Mumbai: Directorate of Economics and Statistics (Planning Department).

Government of Maharashtra, (n.d.) Maharashtra Water Resources Regulatory Authority Bill, 2003: Joint Committee Report. Mumbai: Maharashtra Legislature.

Greenpeace (2012) *Endangered Waters: Impact of coal fired power plants on water supply.* Bengaluru: Greenpeace India Society.

Gupta, A. (1995) Blurred Boundaries: The Discourse of Corruption, the Culture of Politics, and the Imagined State. *American Ethnologist,* 22 (2)**,** 375-402.

Gupta, A. (2005) Narratives of corruption: Anthropological and fictional accounts of the Indian state. *Ethnography,* 6 (1)**,** 5-34.

Gupta, A. & Ferguson, J., (1997) Discipline and Practice: "The Field" as Site, Method and Location in Anthropology. *In* A. Gupta & J. Ferguson eds. *Anthropological Locations: Boundaries and Grounds of Field Science.* Berkeley University of California Press.

Hajer, M.A., (1993) Discourse Coalitions and the Institutionalization of Practice: The Case of Acid Rain in Great Britain. *In* F. Fischer & J. Forester eds. *The Argumentative Turn in Policy Analysis and Planning.* Durham: Duke University Press, 43-76.

Hajer, M.A. (1995) *The Politics of Environmental Discourse: Ecological Modernization and Policy Process.* Oxford: Clarendon Press.

Hall, C., Scott, C. & Hood, C. (2000) *Telecommunications Regulation: Culture, chaos and interdependence inside the regulatory process.* London Routledge.

Hammersley, M. & Atkinson, P. (1995) *Ethnography: Principles in Practice (Second Edition).* London: Routledge.

Hancher, L. & Moran, M., (1989a) Introduction. *In* L. Hancher & M. Moran eds. *Capitalism, Culture and Economic Regulation.* Oxford: Clarendon Press, 1-7.

Hancher, L. & Moran, M., (1989b) Organizing Regulatory Space. *In* L. Hancher & M. Moran eds. *Capitalism, Culture and Economic Regulation.* Oxford: Clarendon Press, 271-299.

Hansen, T.B., (2001) Governance and Myths of State in Mumbai. *In* C.J. Fuller & V. Benei eds. *The Everyday State & Society in Modern India.* London: C. Hurst & Co. (Publishers) Ltd., 31-67.

Hansen, T.B. & Stepputat, F., (2001) Introduction: States of Imagination. *In* T.B. Hansen & F. Stepputat eds. *States of Imagination: Ethnographic Explorations of the Postcolonial State.* Durham: Duke University Press, 1-40.

Haraway, D. (1988) Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective. *Feminist Studies,* 14 (3)**,** 575-599.

Harriss-White, B. (2004) *India Working: Essays on Society and Economy.* New Delhi: Cambridge University Press.

Harvey, D. (1996) Justice, Nature and Geography of Difference. Oxford: Blackwell.

Harvey, D. (2007) Neoliberalism as Creative Destruction. *Annals of the American Academy of Political and Social Science,* 610**,** 22-44.

Haugaard, M., (2002) Power: A Reader. Manchester: Manchester University Press.

Hsueh, R. (2011) *China's Regulatory State: A New Strategy for Globalization.* New York: Cornell University Press.

Indian Irrigation Commission (1903a) *Report of the Indian Irrigation Commission (1901-1903): Part I [digital version]*. London: House of Commons.

Indian Irrigation Commission (1903b) *The Report of the Indian Irrigation Commission (1901-1903): Part IV (Appendix) [digital version]*. London: House of Commons.

Indian Irrigation Commission (1903c) *Report of the Indian Irrigation Commission(1901-1903): Part II (Provincial).* Calcutta: Office of the Superintendant of the Government Printing.

International Conference on Water and the Environment, (1992) The Dublin statement and Report of the Conference. Dublin: World Meteorological Institute.

Iyer, R.R. (2009) *Water and the Laws in India.* New Delhi: Sage Publishers.

Iyer, R.R. (2011) National Water Policy: An Alternative Draft for Consideration. *Economic and Political Weekly,* XLVI (26 -27)**,** 201-214.

Jairath, J. (2001) *Water User Associations in Andhra Pradesh: Initial Feedback.* New Delhi: Concept Publishing Company.

Jairath, J. (2003) Drought of Sanity and Flood of the Absurd: Politics of Water Discourse. *Economic and Political Weekly,* 38 (7)**,** 665-668.

Jeffrey, C. & Lerche, J., (2001) Dimensions of Dominance: Class and State in Uttar Pradesh. *In* C.J. Fuller & V. Benei eds. *The Everyday State & Society in Modern India*. London: C. Hurst & Co. (Publishers) Ltd., 91-114.

Jenkins, R. (1999) *Democratic Politics and Economic Reform in India.* Cambridge: Cambridge University Press.

Jordana, J. & Levi-Faur, D., (2004) The politics of regulation in the age of governance. *In* J. Jordana & D. Levi-Faur eds. *The Politics of Regulation: Institutions and Regulatory Reforms for the Age of Governance.* Cheltenham: Edward Elgar Publishing Limited, 1-28.

Jordana, J., Levi-Faur, D. & i Marín, X.F., (2009) The Global Diffusion of Regulatory Agencies:Channels of Transfer and Stages of Diffusion. *IBEI Working Paper 2009/28.* Barcelona: IBEI.

Joshi, L.K., (2000) Irrigation and its Management in India: Need for Paradigm Shift (Volume 1). *In* L.K. Joshi & R. Hooja eds. *Participatory Irrigation Management: Paradigm for the 21st Century.* Jaipur and New Delhi: Rawat Publications, 217-364.

Joy, K.J. & Kulkarni, S. (2010) *Engaging with the Changing Water Policy Discourse in Maharashtra.* Pune: National Centre for Advocacy Studies.

Joy, K.J., Kulkarni, S., Roth, D. & Zwarteveen, M. (2014) Re-politicising water governance: exploring water re-allocations in terms of justice. *Local Environment***,** 1-20.

Joy, K.J. & Paranjape, S., (2009) Water use: legal and Institutional Framework. *In* R.R. Iyer ed. *Water and the Laws in India.* New Delhi: Sage Publications, 213-250.

Joy, K.J., Sangameswaran, P., A.Latha, Dharmadhikary, S., Prasad, M. & Soma, K., (2011) Life Livelihoods Ecosystems Culture: Entitlement and Allocation of Water for Competing Uses. Pune: Forum for Policy Dialogue on Water Conflicts in India.

Jyotishi, A. & Rout, S. (2005) Water Rights in Deccan Region: Insights from Baliraja and Other Water Institutions. *Economic and Political Weekly,* 40 (2)**,** 149-156.

Kamat, A.R. (1980) Politico-Economic Developments in Maharashtra: A Review of the Post-Independence Period. *Economic and Political Weekly,* 15 (39)**,** 1627-1630.

Kaplan, T.J., (1993) Reading Policy Narratives. *In* F. Fischer & J. Forester eds. *The Argumentative Turn in Policy Analysis and Planning.* Durham: Duke University Press, 167-185.

Kaviraj, S. (1984) On the crisis of political institutions in India. *Contributions to Indian Sociology,* 18 (2)**,** 223-243.

Keeley, J. & Scoones, I. (2003) *Understanding Environmental Policy Processes: Cases from Africa.* London: Earthscan.

Keremane, G.B. & McKay, J. (2006) Self-created Rules and Conflict Management Processes: The Case of Water Users' Associations on Waghad Canal in Maharashtra, India. *International Journal of Water Resources Development,* 22 (4)**,** 543-559.

Kirk, J.A. (2011) *India and the World Bank: The Politics of Aid and Influence.* London: Anthem Press.

Koonan, S. & Bhullar, L. (2012) Water Regulatory Authorities in India: The Way Forward? [online]. *IELRC Policy Paper 2012-04,* Available from http://www.ielrc.org/content/p1204.pdf [Accessed 14/06/14].

Lalvani, M. (2008) Sugar Co-operatives in Maharashtra: A Political Economy Perspective. *The Journal of Development Studies,* 44 (10)**,** 1474-1505.

Lansing, J.S. (1991) *Priests and programmers: technologies of power in the engineered landscape of Bali.* Princeton: Princeton University Press.

Larner, W. (2000) Neo-liberalism. Policy, Ideology, Governmentality. *Studies in Political Economy,* 63 (Autumn)**,** 5-25.

Larner, W. (2003) Neoliberalism? *Environment and Planning D: Society and Space,* 21 (5)**,** 509-512.

Latour, B. (1999) *Pandora's Hope: Essays on the Reality of Science Studies.* Cambridge: Harvard University Press.

Leach, M., Bloom, G., Ely, A., Nightingale, P., Scoones, I., Shah, E. & Smith, A., (2007) Understanding Governance: pathways to sustainability. *STEPS Working Paper 2.* Brighton: STEPS Centre.

Leach, M., Scoones, I. & Stirling, A. (2010) *Dynamic Sustainabilities: Technology, Environment, Social Justice.* Oxon: Earthscan.

Lele, J., (1990) Caste, Class and Dominance: Political Mobilization in Maharashtra. *In* F.R. Frankel & M.S.A. Rao eds. *Dominance and State Power in Modern India: Decline of a Social Order Volume II.* Oxford: Oxford University Press, 115-211.

Lele, S., (2000) Godsend, sleight of hand, or just muddling through: Joint water and forest management in India. *Natural Resources Perspectives* London: Overseas Development Institute.

Levi-Faur, D. (2005) The Global diffusion of Regulatory Capitalism. *The Annals of the American Acedemy of Political and Social Science,* 598 (12)**,** 12-32.

Levy, B. & Spiller, P.T. (1994) The Institutional Foundations of Regulatory Commitment: A Comparative Analysis of Telecommunications Regulation. *Journal of Law, Economics, & Organization* 10 (2)**,** 201-246.

Li, T.M. (1996) Images of Community: Discourse and Strategy in Property Relations. *Development and Change,* 27 (3)**,** 501-527.

Li, T.M. (2007) *The Will to Improve: Governmentality, Development, and the Practice of Politics.* London: Duke University Press.

Lipton, M. & Toye, J. (1990) *Does Aid Work in India? A country assistance of the impact of official development assistance.* London: Routledge.

Livemint. (2011) Water, farm and factory. *Livemint*, 19 April.http://beta.livemint.com/Opinion/TSNMNkm4VgjVQ3K4JDOmWL/Water-farm-and-factory.html [Accessed 4/06/11].

Madhav, R. (2007) Irrigation Reform in Andhra Pradesh: Whither the trajectory of legal changes? [online]. *IELRC Working Paper (2007-04)*, Available from http://www.ielrc.org/content/w0704.pdf [Accessed 10/09/14].

Madhav, R., (2010) Law and Policy Reforms for Irrigation. *In* P. Cullet, A.G. Gualtieri, R. Madhav & U. Ramanathan eds. *Water Law for the Twenty-First Century: National and International Aspects of Water law Reform in India.* London: Routledge, 109-137.

Maharashtra Legislature, (2005) LA Bill No. XIX of 2003: A Bill to provide for the establishment of the Maharashtra Water Resurces Regulatory Authority [...] motion for eliciting public opinion thereon. Mumbai: Secretariat of the Maharashtra Legislature.

Majone, G. (1994) The Rise of the Regulatory State in Europe. *West European Politics*, 17 (3)**,** 77-101.

Majone, G. (1997) From the Positive to the Regulatory State: Causes and Consequences of Changes in the Mode of Governance. *Journal of Public Policy*, 17 (02)**,** 139-167.

Marcus, G.E. (1995) Ethnography of In/of the World System: The Emergence of the Multi-Sited Ethnography. *Annual Review of Anthropology*, 24**,** 95-117.

McCully, P. (2001) *Silenced rivers: the ecology and politics of large dams.* London: Zed Books.

Mearns, R. (1996) Community, collective action and common grazing: The case of post-socialist Mongolia. *The Journal of Development Studies*, 32 (3)**,** 297-339.

Mehta, L., (2004) Financing water for all: Behind the border policy convergence in water management. *IDS Working paper 233.* Brighton: IDS.

Mehta, L. (2005) *The politics and poetics of water: the naturalisation of scarcity in Western India.* New Delhi: Orient Longman.

Mehta, L. (2006) Water and Human Development: Capabilities, Entitlements and Power [online]. *Background Paper for the Human Development Report*, Available from http://hdr.undp.org/en/reports/global/hdr2006/papers/Mehta_L_rev.pdf [Accessed 24/10/11].

Mehta, L., Leach, M., Newell, P., Scoones, I., K.Sivaramakrishnan & Way, S.-A., (1999) Exploring Understandings of Institutions and Uncertainty:New Directions in Natural Resource Management. *IDS Discussion Paper 372.* Brighton: IDS.

Mehta, U.S. (2010) Begin with a uniform approach. *Financial Express*, 30 June.http://www.cuts-ccier.org/ArticlesJune10-Begin_with_a_uniform_approach.htm [Accessed 2/02/13].

Meidinger, E. (1987) Regulatory Culture: A Theoretical Outline*. *Law & Policy*, 9 (4)**,** 355-386.

Meinzen-Dick, R., K.V.Raju & Gulati, A., (2000) Conditions for Collective Action in Canal Irrigation Systems. *In* L.K.Joshi & R. Hooja eds. *Participatory Irrigation Management: Paradigm for the 21st century (Volume 1).* Jaipur and New Delhi: Rawat Publications, 115-143.

Meyer, J.W. & Rowan, B. (1977) Institutionalized Organizations: Formal Structure as Myth and Ceremony. *American Journal of Sociology,* 83 (2)**,** 340-363.

Mitchell, T. (1991) The limits of the State: beyond the statist approaches and their critics. *American Political Science Review,* 85**,** 77-96.

Mitchell, T., (2006) Society, Economy, and the State Effect. *In* A. Gupta & A. Sharma eds. *The anthropology of the state: a reader.* Oxford: Blackwell Publishing, 169-186.

Mohanty, B.B. (2009) Regional Disparity in Agricultural Development of Maharashtra. *Economic and Political Weekly,* 44 (6)**,** 63-69.

Molle, F. (2008) Nirvana Concepts, Narratives and Policy Models: Insights from the Water Sector [online]. *Water Alternatives,* 1 (1)**,** 131-156. Available from http://www.water-alternatives.org/index.php/alldoc/articles/vol1/v1issue1/20-a-1-1-8/file [Accessed on 24/03/13].

Mollinga, P.P., (2000) The Inevitability of Reform: Towards Alternative Approaches for Canal Irrigation Development in India. *In* L.K. Joshi & R. Hooja eds. *Participatory Irrigation Management: Paradigm for the 21st century (Volume 1).* Jaipur and New Delhi: Rawat Publications, 67-97.

Mollinga, P.P. (2003) *On the Waterfront: Water Distribution, Technology and Agrarian Change in a South Indian Canal Irrigation System.* New Delhi: Orient Longman.

Mollinga, P.P., (2005) The Water Resources Policy Process in India: Centralisation, Polarisation and New Demands on Governance. Bonn: Centre for Development Research.

Mollinga, P.P., Bhat, A. & Saravanan, V.S., (2010) When policy meets reality: political dynamics and the practice of integration in water resources management reform. *In* P.P. Mollinga, A. Bhat & V.S. Saravanan eds. Berlin: Lit Verlag, 1-26.

Mollinga, P.P. & Bolding, A., (2004) Introduction. *In* P.P. Mollinga & A. Bolding eds. *The Politics of irrigation reform: Contested Policy formulation and Implementation in Asia, Africa and Latin America.* Aldershot: Ashgate, 1-10.

Mollinga, P.P., Doraiswamy, R. & Engbersen, K., (2004) Capture and Transformation: Participatory Irrigation Management in Andhra Pradesh, India. *In* P.P. Mollinga & A. Bolding eds. *The Politics of Irrigation Reform.* Aldershot: Ashgate, 240-262.

Moore, M. (1989) The fruits and fallacies of neoliberalism: The case of irrigation policy. *World Development,* 17 (11)**,** 1733-1750.

Moran, M. (2002) Understanding the Regulatory State. *British Journal of Political Science,* 32**,** 391-413 (1-24).

Morgan, B. & Yeung, K. (2007) *An Introduction to Law and Regulation: Text and Materials.* Cambridge: Cambridge University Press.

Mosse, D. (2003) *The Rule of Water: Statecraft, Ecology and Collecive Action in South India.* New Delhi: Oxford University Press.

Mosse, D. (2004) Is Good Policy Unimplementable? Reflections on the Ethnography of Aid Policy and Practice. *Development and Change,* 35 (4)**,** 639-671.

Mosse, D. (2005) *Cultivating development: an ethnography of aid policy and practice.* New Delhi: Vistaar Publications.

Mosse, D. (2006) Anti-social anthropology? Objectivity, objection and the ethnography of public policy and professional communities. *Journal of the Royal Anthropological Institute,* N.S. (12)**,** 935-956.

Movik, S. (2012) *Fluid Rights: Water Allocation Reform in South Africa.* Cape Town: Human Sciences Research Council.

Mukherji, R. (2004) Managing Competition: Politics and the Building of Independent Regulatory Institutions. *India Review,* 3 (4)**,** 278-305.

MWRRA, (2007) Procedure for Regulation and Enforcement of Entitlements: Powers and Functions of Regulators and the responsibility of WRD officials Mumbai: Maharashtra Water Resources Regulatory Authority.

MWRRA, (2012) Draft Approach Paper on Trading in Entitlements. Mumbai: MWRRA.

Nader, L., (1972) Up the Anthropologist- Perspectives Gained from Studying Up. *In* D. Hymes ed. *Reinventing Anthropology.* New York Pantheon Books, 284-311.

Nader, L. & Nader, C., (1985) A Wide Angle on Regulation: An Anthropological Perspective. *In* R.G. Noll ed. *Regulatory Policy and the Social Sciences.* Berkeley University of California Press, 141-160.

Narain, V. (2003) *Institutions, Technology and Water Control.* New Delhi: Orient BlackSwan.

Narayanamoorthy, A. & Deshpande, R.S. (2005) *Where Water Seeps: Towards a New Phase in India's Irrigation Reforms.* New Delhi: Academic Foundation.

Narsalay, R., (2003) Who controls rights over water in an unfolding GATS regime? A case study of India. Paper prepared for the Research Project on Linking the WTO to the Poverty reduction Agenda, June. Conference.

Noll, R.G., (1985) Government Regulatory Behaviour: A Multidisciplinary Survey and Synthesis. *In* R.G. Noll ed. *Regulatory Policy and the Social Sciences.* Berkeley: University of California Press, 9-63.

North, D.C. (1990) *Institutions, institutional change and economic performance.* Cambridge: Cambridge University Press.

Ogus, A.I. (1996) *Regulation: Legal Form and Economic Theory.* Oxford: Oxford University Press.

Omvedt, G. (1973) Development of the Maharashtrian Class Structure, 1818 to 1931. *Economic and Political Weekly,* 8 (31/33)**,** 1417-1432.

Ostrom, E. (1990) *Governing the Commons: The Evolution of Institutions for Collective Action.* Cambridge: Cambridge University Press.

Parade, S.D. (1995) *Status of Irrigation Management Transfer in India: Water Users' Association in Minor 10 (Shevare) Bhima Project: Farmers Experience.* Colombo: Indian Institute of Management (Ahmedabad) & International Irrigation Managment Institute (Colombo).

Paranjpe, S., Joy, K. & Scott, C., (n.d.) The Ozar Water User Societies: Impact of Society Formation and Co-management of Surface Water and Groundwater. Conference on: *WALMI Workshop,* Aurangabad.

Parker, D. & Kirkpatrick, C., (2002) Researching Economic Regulation in Developing Countries: Developing a Methodology for Critical Analysis. *Centre on Regulation and Competition: Working Paper Series 34.* Manchester: IDPM, University of Manchester.

Patil, R.K. (1988) Experiences of farmer participation in irrigation management: Mula command Maharashtra State, India. *Irrigation and Drainage Systems,* 2 (1)**,** 21-41.

Patil, R.K. & Lele, S.N. (1994) *Farmers' Participation in Irrigation Management - A Case Study of Maharashtra* New Delhi: Horizon India Books.

Peck, J. & Tickell, A. (2002) Neoliberalizing Space. *Antipode,* 34 (3)**,** 380-404.

Peet, R. & Hartwick, E. (2009) *Theories of Development: Contentions, Arguments , Alternatives (Second Edition).* London: The Guildford Press.

Petrella, R. (2001) *The Water Manifesto: Arguments for the World Water Contract.* London: Zed Books.

Phadke, R. (2002) Dreams of a water warrior [online] [online]. *Seminar.,* 516 Available from http://www.india-seminar.com/2002/516/516%20roopali%20phadke.htm [Accessed 25/04/14].

Pike, J.G. (1995) Some aspects of irrigation system management in India. *Agricultural Water Management,* 27 (2)**,** 95-104.

Powell, W.W. & DiMaggio, P. (1991) *The New institutionalism in organizational analysis.* University of Chicago Press.

PPIAF, (2002) Power Sector Reform in Orissa: Lessons for Other States in India. Washington D.C.: PPIAF Gridlines.

Prabhu, K.S. & Sarker, P.C. (1992) Identification of Levels of Development: Case of Maharashtra. *Economic and Political Weekly,* 27 (36)**,** 1927-1937.

Prado, M.M., (2013) Bureaucratic Resistance to Regulatory Reforms: Contrasting Experiences in Electricty and Telecommunications in Brazil. *In* N.K. Dubash & B. Morgan eds. *The Rise of the Regulatory State of the South: Infrastructure and Development in Emerging Economies.* Oxford: Oxford University Press, 75-97.

Prayas (2010a) *Independent Water Regulatory Authorities in India: Analysis and Interventions (2006-2009).* Pune: Resources and Livelihoods Group, Prayas.

Prayas, (2010b) *Sinchanache pani udyoganna va shaharanna valavinyaachyaa Maharashtra rajyateel dhorananchaa va ammalbajaavanichaa abhyas* (A study of policy and its implementation of diversion of irrigation water to industries and cities in the state of Maharashtra). Pune: Resources and Livelihoods Group, Prayas.

Prayas, (2011) Background Note for National Consultation on Water Regulatory Authorities in India: Rethinking the Current Models (Part 1) [unpublished note]. Prayas.

Prosser, T. (1999) Theorising Utility Regulation. *The Modern Law Review,* 62 (2 March)**,** 196-217.

Prosser, T. (2005) Regulatory Contracts and Stakeholder Regulation. *Annals of Public and Cooperative Economics,* 76 (1)**,** 35-57.

Rabinow, P. (1977) *Reflections on Fieldwork in Morocco.* Berkeley: University of California Press.

Rabinow, P. (ed.) (1991) *The Foucault Reader: An Introduction to Foucault's Thought,* London: Penguin Books

Rajgopal, A., Doraiswamy, R., Mollinga, P.P., Joy, K.J. & Paranjape, S., (2002) Tailenders and other deprived in irrigation in India: Tamil Nadu, Karnataka and Maharashtra. The Netherlands: Irrigation and Water

Engineering, Wageningen with Development Support Centre(Ahmedabad) SOPPECOM (Pune), SaciWATERs(Hyderabad).

Rajshekhar, M. (2006) Sponge bath for the future. *India Together*, 20 March.www.indiatogether.org/2006/mar/env-water.htm [Accessed 12/01/11].

Raju, K.V. & Gulati, A., (2008) Pricing, Subsidies and Institutional Reforms in Indian Irrigation: Some Emerging Trends. *In* V. Ballabh ed. *Institutional Alternatives and Political Economy.* New Delhi: Sage, 79-99.

Ramamurthy, P., (1995) The political economy of canal irrigation in south India. PhD thesis. Syracuse University, New York.

Ranganathan, M., (2010) Fluid Hegemony: A Political Ecology of Water, Market Rule, and Insurgence at Bangalore's Frontier. PhD thesis. University of California, Berkeley.

Rap, E. (2006) The success of a policy model: Irrigation management transfer in Mexico. *The Journal of Development Studies,* 42 (8)**,** 1301-1324.

Rap, E., Wester, P. & Pérez-Prado, L.N., (2004) The Politics of Creating Commitment: Irigation reforms and the constitution of the Hydraulic Bureaucracy in Mexico. *In* P.P. Mollinga & A. Bolding eds. *The Politics of Irrigation Reform: Contested Policy Formulation and Implementation in Asia, Africa and Latin America.* Aldershot: Ashgate, 57-94.

Rath, N. & Mitra, A.K. (1989) Economics of Irrigation in Water-Scarce Regions: Study of Maharashtra. *Artha vijnana,* 31 (1)**,** 1-129.

Rein, M. & Schön, D., (1993) Reframing Policy Discourses. *In* F. Fischer & J. Forester eds. *The Argumentative Turn in Policy Analysis and Planning.* Durham: Duke University Press, 145-166.

Reinhold, S., (1994) Local Struggle and Idelogical Struggle: "Positive Images" and Section 28. PhD thesis. University of Sussex.

Repetto, R., (1986) Skimming the water: Rent-seeking and the Performance of Public IrrigationSystems (Research Report #4). Washington D.C.: World Resources Institute.

Roe, E. (1994) *Narrative Policy Analysis: Theory and Practice.* Durham: Duke University Press.

Rose, N. (1999) *Powers of Freedom: Reframing Political Thought.* Cambridge: Cambridge University Press.

Rosegrant, M.W. & Binswanger, H.P. (1994) Markets in tradable water rights: Potential for efficiency gains in developing country water resource allocation. *World Development,* 22 (11)**,** 1613-1625.

Rosenthal, D.B. (1974) "Making It" in Maharashtra. *The Journal of Politics,* 36 (2)**,** 409-437.

Roth, D., Boelens, R. & Zwarteen, M., (2005) Legal Complexity in the Analysis of Water Rights and Water Resources Management. *In* D. Roth, R. Boelens & M. Zwarteen eds. *Liquid Relations: Contested Water Rights and Legal Complexity.* New Jersey: Rutgers University Press, 1-20.

Rudolph, L.I. & Rudolph, S.H. (1987) *In Pursuit Of Lakshmi: The Political Economy Of The Indian State.* Orient BlackSwan.

Rudolph, L.I. & Rudolph, S.H. (2001) Iconisation of Chandrababu: Sharing Sovereignty in India's Federal Market Economy. *Economic and Political Weekly,* 36 (18)**,** 1541-1552.

Rudolph, L.I. & Rudolph, S.H. (2009) Centrist Logic of Indian Politics. *Economic and Political Weekly,* 15 (37)**,** 69-70.

Sachs, J.D., Varshney, A. & Bajpai, N., (1999) Introduction. *India in the Era of Economic Reforms.* New Delhi: OUP.

Saez, L. (2002) *Federalism Without a Centre: The Impact of Political and Economic Reform on India's Federal System.* New Delhi: SAGE Publications.

Sainath, P. (2005) Maharashtra's coming water wars. *The Hindu,* 27 April http://www.hindu.com/2005/04/27/stories/2005042702871300.htm [Accessed 2/05/08].

Saleth, R., (1998) Water Markets in India: Economic and Institutional Aspects. *In* K.W. Easter, M.W. Rosegrant & A. Dinar eds. *Markets for Water: Potential and Performance.* Massachusets: Kluwer Academic Publishers, 187-205.

Saleth, R.M., (2007) Water Rights and Entitlements. *In* J. Briscoe & R.P.S. Malik eds. *Handbook of Water Resources in India: Development, Management, and Strategies.* New Delhi: Oxford University Press, 282-305.

Saleth, R.M. & Dinar, A. (1999) Water Challenge and Institutional Response: A cross-country perspective [online]. Available from http://elibrary.worldbank.org/doi/pdf/10.1596/1813-9450-2045 [24/11/13].

Sangameswaran, P., (2006) Discourses in Water and Water Reform [Online]. Conference on: *Water, Law and the Commons*, New Delhi, India (8-10 December, 2006). http://www.ielrc.org/activities/workshop_0612/content/d0616.pdf [Accessed 27/07/08].

Sangameswaran, P. (2009a) Neoliberalism and water reforms in western India: Commercialization, self-sufficiency, and regulatory bodies. *Geoforum,* 40 (2)**,** 228-238.

Sangameswaran, P. (2009b) Water Rights for the Landless in Western India: From Pani Panchayat to Water Entitlements. *European Journal of Development Research,* 21 (2)**,** 195-212.

Sangameswaran, P. (2014) *Neoliberalism and Water: Complicating the Story of Reforms in Maharashtra.* New Delhi: Orient BlackSwan Private Ltd.

Sathe, M.D., (1986) MAHARASHTRA-Social Basis of Sharing Irrigation Water-Central Issue in Well-being of Poor. 737-738.

Scott, C. (2001) Analysing regulatory space: fragmented resources and institutional design. *Public law(Summer)***,** 329-353.

Scott, C., (2004) Regulation in the age of governance: The rise of the post-regulatory state. *In* J. Jordana & D. Levi-Faur eds. *The Politics of Regulation: Institutions and Regulatory Reforms for the Age of Governance.* Cheltenham: Edward Elgar Publishing Limited, 145-174.

Scott, J.C. (1990) *Domination and the Arts of Resistance: Hidden Transcripts.* New Haven: Yale University Press.

Scott, J.C. (1998) *Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed.* New Haven: Yale University Press.

Sekhar, A., (2007) Development and Management Policies: Perspective of the Planning Commission. *In* J. Briscoe & R.P.S. Malik eds. *Handbook of Water Resources in India: Development, Management, and Strategies.* New Delhi: Oxford University Press, 47-68.

Sekhar, A., (2011) Maharashtra Water Resources Regulatory Authority: Legislative/ Regulatory Framework in Water Sector. Conference on: *Water for Inclusive Growth*, Gandhinagar (22 March, 2011).

Shah, A.C., (2000) Capacity Building for Participatory Irrigation Management. *In* L.K.Joshi & R. Hooja eds. *Participatory Irrigation Management: Paradigm for the 21st Century (Volume 1).* Jaipur and New Delhi: Rawat Publications, 145-161.

Shah, E. (2003) *Social Designs: Tank Irrigation Technology and Agrarian Transformation in Karnataka, South India.* New Delhi: Orient Longman.

Shah, E., (2008) Resource, Rule and Technology: Ethnography of Building a Water Users' Association. *In* V. Ballabh ed. *Governance of Water: Institutional Alternatives and Political Economy.* New Delhi: Sage, 137-173.

Shah, M. (2012) Water: Towards a Paradigm Shift in the Twelfth Plan. *Economic and Political Weekly,* 48 (3)**,** 40-52.

Shah, T. & Koppen, B.v. (2006) Is India Ripe for Integrated Water Resources Management? Fitting Water Policy to National Development Context. *Economic and Political Weekly,* 41 (31)**,** 3413-3421.

Sharma, A. & Gupta, A., (2006) Introduction: Rethinking Theories of the State in the Age of Globalization. *In* A. Sharma & A. Gupta eds. *the anthropology of the state: a reader.* Oxford: Blackwell Publishing, 1-41.

Shore, C. & Wright, S., (1997) Policy: A new field of anthropology. *In* C. Shore & S. Wright eds. *Anthropology of Policy: Critical Perspectives on Governance and Power.* Oxon: Routledge, 3-39.

Shore, C., Wright, S. & Pero, D., (2011) Conceptualising Policy: Technologies of Governnace and Politics of Visibility. *In* C. Shore, S. Wright & D. Pero eds. *Policy Worlds: Anthropology and Analysis of Contemporary Power.* New York: Berghahn Books, 1-25.

Singh, C., (1992) Water Rights in India. *In* C. Singh ed. *Water Law in India.* New Delhi: Indian Law institute, 8-31.

Sinha, A. (2004) The Changing Political Economy of Federalism in India: A Historical Institutionalist Approach. *India Review,* 3 (1)**,** 25-63.

Snape, D. & Spencer, L., (2003) The Foundations of Qualitative Research. *In* J. Ritchie & J.Lewis eds. *Qualitative Research Practice: A Guide for Social Science Students and Researchers.* London: Sage Publications.

Sodal, S., (2009) Experience on Management Reform Initiatives & Regulatory Mechanism in the Water Resource Sector in Maharashtra, India. Conference on: *South Asia Conclave on enabling Regulation in Infrastructure (3-4th November, 2009),* New Delhi.

Sodal, S.V., (2007) Reforms Initiatives in Water Sector in Maharshtra. Conference on: *Legal Aspects of Water Sector Reforms,* Geneva. www.ielrc.org/activities/workshop_0704/content/d0724.pdf [Accessed 14/06/2011].

Srivastava, S. (2012) Swajaldhara: 'Reversed' Realities in Rural Water Supply in India. *IDS Bulletin,* 43 (2)**,** 37-43.

Stigler, G.J. (1971) The Theory of Economic Regulation. *The Bell Journal of Economics and Management Science,* 2 (1)**,** 3-21.

Stiglitz, J. (1998) Distinguished Lecture on Economics in Government: The Private Uses of Public Interests: Incentives and Institutions. *The Journal of Economic Perspectives,* 12 (2)**,** 3-22.

Stirling, A., (2005) Opening up or closing down: Analysis, participation and power in the social appraisal of technology. *In* M. Leach, I. Scoones & B. Wynne eds. *Science and Citizens: Globalization and the Challenge of Engagement.* London and New York: Zed Books, 218-231.

Stone, I. (1984) *Canal Irrigation in British India.* Cambridge: Cambridge University Press.

Strauss, S., (2000) Locatig yoga: Ethnography and transnational practice. *In* V. Emit ed. *Constructing the Field: Ethnographic Fieldwork in the Contemporary World.* London and New York: Routledge, 162-194.

Sunstein, C.R. (1990) *After the Rights Revolution: Reconceiving the Regulatory State.* Cambridge: Harvard University Press.

Sutton, R., (1999) The Policy Process: An Overview, Working Paper 118. London: Overseas Development Institute.

Thakkar, H. (2007) Surely, people should have a say. *Livemint*, 9 May.http://www.livemint.com/2007/05/09000327/Surely-people-should-have-a-s.html [Accessed 4/05/2008].

Thatcher, M. & Sweet, A.S. (2002) Theory and Practice of Delegation to Non-Majoritarian Institutions. *West European Politics*, 25 (1)**,** 1 - 22.

The Business Standard. (2004) Maharashtra seeks $300m WB funding. *The Business Standard*, 23 June.http://www.business-standard.com/article/economy-policy/maharashtra-seeks-300m-wb-funding-104062301017_1.html [Accessed 14/05/12].

The Economic Times. (2010) Plan panel seeks public comments on Regulatory Reforms Bill. *The Economic Times*, 23 May http://articles.economictimes.indiatimes.com/2010-05-23/news/27584534_1_plan-panel-energy-sector-planning-commission [Accessed 23/05/12].

The Financial Express. (2005) Maharashtra takes the lead in water reforms. *The Financial Express*, 10 October.http://www.financialexpress.com/news/maharashtra-takes-a-lead-in-water-reforms/150948/1 [Accessed 20/04/12].

The Hindu. (2010) 'Draft bill on regulatory reforms soon'. *The Hindu*, 23 March http://www.thehindu.com/business/Economy/article281024.ece [Accessed 23/ 06/10].

The Indian Express. (2011) MWRRA not needed now, says Vikhe Patil. *The Indian Express*, 24 April.http://archive.indianexpress.com/news/mwrra-not-needed-now-says-vikhe-patil/780532/ [Accessed 20/05/2011].

Throgmorton, J. (ed.) (1993) *Survey Research as Rhetorical Trope: Electric Power Planning Arguments in Chicago,* Durham: Duke University Press.

Tilak, M.D.G. & Rajvanshi, B.S. (1991) Operation of Irrigation Systems in India. *International Commission for Irrigation and Drainage,* I (B)**,** 1-13.

Trouillot, M.R. (2001) The Anthropology of the State in the Age of Globalization: Close Encounters of the Deceptive Kind. *Current Anthropology*, 42 (1)**,** 125-138.

Tuebner, G., (1988) The Transformation of Law in the Welfare State. *In* D. Gruyter ed. *The Dilemmas of Law in the Welfare State.* Berlin: Walter de Gruyter and Co.

Twyman, C., Morrison, J. & Sporton, D. (1999) The Final Fifth: Autobiography, Reflexivity and Interpretation in Cross-Cultural Research. *Area*, 31 (4)**,** 313-325.

Upadhyaya, V. (2005) Confusing water rights with quotas. *India Together*, 27 October.http://indiatogether.org/2005/oct/vup-rights.htm [Accessed 3/05/08].

Upadhyaya, V., (2006) Beyond the Buzz: Panchayats, Water User Groups and Law in India:. *CSLG Working Paper Series.* New Delhi: Centre for the Study of Law and Governance.

Uphoff, N., (2000) Toward New and Sustainable Models of Organisation for Better Irrigation Management. *In* L.K. Joshi & R. Hooja eds. *Participatory Irrigation Management: Paradigm for the 21st century (Volume 1).* Jaipur and New Delhi: Rawat Publications, 18-34.

Urs, K. & Whittell, R. (2009) *Resisting Reform? water profits and democracy.* New Delhi: Sage Publication.

Uruena, R., (2013) Global Water Governance and the Rise of the Constitutional Regulatory State in Colombia. *In* N.K. Dubash & B. Morgan eds. *The Rise of the Regulatory State of the South: Infrastructure and Development in Emerging Economies.* Oxford: Oxford University Press, 27-52.

Vaidyanathan, A. & Jairaj, B., (2009) Legal Aspects of Water Resources Management. *In* R.R. Iyer ed. *Water and the Laws in India.* New Delhi: Sage Publications, 3-13.

Van Koppen, B., Moriarty, P. & Boelee, E. (2006) *Multiple-use water services to advance the millennium development goals.* Colombo: International Water Management Institute.

Vani, M.S., (2009) Community Engagement in Water Governance. *In* R.R. Iyer ed. India: SAGE Publications, 167-212.

Varshney, A., (1999) Mass Politics or Elite Politics?: India's Economic Reforms in Comparative Perspective. *In* J. Sachs, A. Varshney & N. Bajpai eds. *India in the Era of Economic Reforms.* New Delhi: Oxford University Press, 222-260.

Vibert, F. (2014) *The New Regulatory Space.* Cheltenham & Northampton: Edward Elgar.

Visvesaraya, S.M. (1951) *Memoirs of My Working Life.* Bangalore: Uplands.

Vogel, S.V. (1996) *Freer Markets, More Rules: Regulatory Reform In Advanced Industrial Countries.* Ithaca: Cornell University Press.

Wade, R. (1982) The system of administrative and political corruption: Canal irrigation in South India. *The Journal of Development Studies,* 18 (3)**,** 287-328.

Wade, R. (1984) Irrigation reform in conditions of populist anarchy : An Indian case. *Journal of Development Economics,* 14 (3)**,** 285-303.

Wade, R. (1989) *Village Republics: Economic conditions for collective action in South India.* Cambridge: Cambridge University Press.

Wade, R. & Chambers, R. (1980) Managing the Main System: Canal Irrigation's Blind Spot. *Economic and Political Weekly,* 15 (39)**,** A107-A112.

Wagle, S. & Warghade, S. (2010) New laws establishing independent regulatory agencies in the Indian water sector: Long term implications for governance. *South Asian Water Studies,* 2 (1)**,** 49-77.

Wagle, S., Warghade, S. & Sathe, M. (2012) Exploiting political obscurity for legalising water grabbing in the era of economic reform in Maharashtra, India [online]. *Water Alternatives,* 5 (2)**,** 412-430. Available from http://www.water-

alternatives.org/index.php?option=com_content&task=view&id=214&Itemid=5 [Accessed 24/09/13].

Walker, G. (2014) Water Scarcity in England and Wales as a Failure of (meta) governance [online]. *Water Alternatives*, 7 (2)**,** 388-413. Available from http://www.water-alternatives.org/index.php/alldoc/articles/vol7/v7issue2/253-A7-2-6/file [Accessed 10/07/14].

Walters, V. (2013) *Water, Democracy and Neoliberalism in India: The Power to Reform.* Oxon: Routledge

Wedel, J.R., Shore, C., Feldman, G. & Lathrop, S. (2005) Toward an Anthropology of Public Policy. *The Annals of the American Academy of Political and Social Science*, 600 (1)**,** 30-51.

Weiner, M., (1999) The Regionalization of Indian Politics. *In* J.D. Sachs, A. Varshney & N. Bajpai eds. *India in the Era of Economic Reforms.* New Delhi: OUP, 261-296.

Weiss, L., (2012) The Myth of the Neoliberal State. *In* C. Kying-Sup, B. Fine & L. Weiss eds. *Developmental Politics in Transition.* London: Palgrave Macmillan, 27-42.

Wetherell, M., Taylor, S. & Yates, S.J. (eds.) (2001) *Discourse as Data*, Milton Keynes: The Open University.

Whitcombe, E. (1993) Famine Mortality. *Economic and Political Weekly*, 28 (23)**,** 1169-1179.

Williamson, J., (2004) A Short History of the Washington Consensus Conference on: *Paper commissioned by Fundación CIDOB for a conference "From the Washington Consensus towards a new Global Governance," (September 24–25, 2004).* , Barcelona. http://www.iie.com/publications/papers/williamson0904-2.pdf [Accessed 5/09/14].

Wittfogel, K.A. (1957) *Oriental despotism: a comparative study of total power.* New Haven: Yale University Press.

Woodhouse, P. & Chhotray, V., (n.d.) Legal and extra legal channels for the redress of historical injustice: Water rights in India and South Africa.

World Bank, (1993) Water Resources Management: A World Bank Policy Paper. Washington D.C.: World Bank.

World Bank (1995) *Economic developments in India: achievements and challenges.* Washington, D.C.: World Bank.

World Bank, (1998a) India: Water Resource Management Sector Review: Report on the Irrigation Sector New Delhi: Allied Publishers.

World Bank, (1998b) India: Water Resources Management Sector Review: Initiating and Sustaining Water Reforms. Washington D.C.: World Bank.

World Bank, (1998c) Inter-Sectoral Water Allocation, Planning and Management. New Delhi.

World Bank, (2002) India: World Bank Assistance for Water Resources Management : A Country Assistance Evaluation. Washington D.C.: World Bank.

World Bank, (2004) Institutional Reform Options in the Irrigation Sector. Washington DC.

World Bank, (2005) Project Appraisal Document on a Proposed Loan in the Amount of US$325.00 Million to the Republic of India for Maharashtra Water Sector Improvement Project.

Worster, D. (1985) *Rivers of empire: water, aridity and growth of the American West.* New York: Pantheon Books.

Wright, S. (1998) The Politicization of 'Culture'. *Anthropology Today,* 14 (1)**,** 7-15.

Writ Petition No. 1038/2010, (2010a) *Society for Backlog Removal & Development &Others vs. State of Maharashtra & Others: Counter filed by Respondent no.2*. Nagpur: High Court of Judicature at Bombay, Nagpur Bench.

Writ Petition No. 1038/2010, (2010b) *Society for Backlog Removal & Development and Others vs. State of Maharashtra & Others*. Nagpur: High Court of Judicature at Bombay, Nagpur Bench.

Yeung, K., (2010) The Regulatory State. *In* R. Baldwin, M. Cave & M. Lodge eds. *The Oxford Handbook of Regulation.* Oxford: Oxford University Press.

Zwanenberg, P.v., Ely, A. & Smith, A. (2011) *Regulating technology: International Harmonization and Local Realities.* London: Earthscan.

Zwarteveen, M. (2011) Questioning Masculinities in Water:. *Economic and Political Weekly,* XIVI (18)**,** 40-48.

11. Appendices

11.1 Glossary

andaz	estimate
bavdi	step well
bhau	elder brother
bhau sahib	canal inspector
bheeshan dushkaal	intense period of drought
big bagaitdar	large landholders
binvirodh	without opposition
chaari	minor
chaupal	community meeting/community space
command area	area irrigated by the dam
dharna	sit-ins for protest
distributary	channels taking off from main or branch canal supplying water to minors
dushkaal	period of intense drought
form no.7	Form that farmers need to fill before the water rotation, also called the demand form
gin ke paani	volumetric supply of water
hakk	right
hungam	crop season
kastkars	farmers
kharif	summer crop season from 1 July to mid-October
lift	Where water is pumped up from the source including reservoirs, rivers or backwaters, etc.
Mantralaya	Secretariat (Mumbai)
medpalak	Sheep herders
minors	The lowest level of channel on a main system
mulgi	girl
Nizamiyat	kingdom of the Nizam of Hyderabad
paani	water
palak mantri	guardian minister
pani panchayat	water council
pani waapar sanstha	water user association
pani hakkadari	water entitlement
patkari	canal officer
raajkaran	politics
rabi	winter crop season from15 October to 28 February
rao sahib	section officer
sanstha	organisation, here WUAs
sahib	officer
sarkaar	government
shejpali	system of watering by turns
shaasan	irrigation bureaucracy
shet chaari	field channel
shetkari	farmer (Western Maharashtra)
tai	elder sister
taluka	administrative jurisdiction below the district
takavi	cash advances from the government for seeds, tools, etc.
udapa kshetra	rocky area
unhaal	crop season from 1 March to 30 June
vasooli	collection of water charges
vihir	wells

11.2 List of interviewees

KI	Name and Affiliation[130]	Date of interview
1	Prof. Ramaswamy R. Iyer, Retd. Secretary, Ministry of Water Resources (India); Research Professor, Centre for Policy Research (New Delhi).	9 November, 2011
2	Senior Water Resources Specialist, South Asia Sustainable Development Department	15 November, 2011 & 4 October, 2012
3	Prof. Philippe Cullet, Professor, SOAS (UK); Senior Visiting Fellow, Centre for Policy Research (New Delhi)	20 September, 2011
4	Dr. Priya Sangameswaran, Assistant Professor, Centre for Studies in Social Sciences, Calcutta (via email and phone)	22 September, 2011
5	Mr. Shripad Dharmadhikary, MANTHAN	10 October, 2011
6	Dr. Navroz K. Dubash, Senior Fellow, Centre for Policy Research (New Delhi)	5 October, 2012
7	Professor, Tata Institute of Social Sciences (Mumbai);	January, 2012
8	Sachin Warghade, Prayas (Pune)	12 June, 2012
9	Mandar Sathe, Researcher, Prayas	12 June, 2012
10	Fellow, SOPPECOM	7 October, 2011
11	Ms. Seema Kulkarni, Fellow, SOPPECOM	30 August, 2012
12	Fellow, SOPPECOM	7 October, 2011
13	Research Associate, SOPPECOM	30 August, 2012
14	Social Activist, Shramik Mukti Dal, leader dam-oustee movement	
15	Social Activist, Samaj Parivartan Kendra, Nasik	2 &4 December, 2011
16	Prof. Pradeep Purandhare, Professor (retd) WALMI, Aurangabad	19 August, 2012
17	Mr. S.N. Lele, Retd. Engineer (WRD); SOPPECOM	13 June, 2012
18	Member, GOMUKH, Pune	9 October, 2011
19	Team Leader , M&E Consultancy, MWSIP	24 July, 2012
	Government officials	
20	Secretary, MWRRA, Mumbai	16 June, 2012
21	Member, MWRRA, Mumbai	11January 2012
22	Chairperson MWRRA, Mumbai	18 November, 2011 & 14 June, 2012
23	Chairperson, MWRRA, Mumbai	25 July, 2012
24	Mr. Prabhakar, Member; MWRRA	20 June, 2012
25	Secretary, WRD, Mumbai	28 November 2011
26	Joint Secretary, WRD, Mumbai/Nasik	28 November 2011& 18 August 2012
27	Chief Engineer, WRD, Pune	26 July, 2012
28	Mr. Surve, Superintending Engineer, WRD, Mumbai	13 July, 2012
29	Executive Engineer, WRD, Pune	26 July, 2012
30	Executive Engineer, WRD, Nasik	2 December 2011 &18 August 2012
31	Deputy Engineer, WRD, Nasik	2 December, 2011
32	Assistant Engineer, WRD, Nagpur	9 December, 2011
33	Superintending Engineer, WRD, Nagpur	9 December, 2011
34	Junior Engineer, WRD, Nagpur	9 December, 2011
35	Officer, WRD, Nagpur	10 December, 2011
36	Superintending Engineer, WRD, Amravati	12 December, 2011
37	Junior Engineer, WRD, Amravati	12 & 13 December, 2011

[130] Not all interviewees have been explicitly quoted in this thesis. However since all of these discussions have helped me in the analysis, I sincerely acknowledge and appreciate the help and time of my respondents.

38	Officer, WRD, Amravati	12 December, 2011
39	Officer, WRD, Amravati	13 December, 2011
40	Mr. Parekh, Engineer, WRD, Shrigonda	9 April, 2012
41	Mr. Sayaji, officer , WRD, Shrigonda	6 April, 2012
42	Mr. More, Officer, WRD, Shrigonda	10 May, 2012
43	Mr. Pomane, Officer, WRD, Shrigonda	23 March, 2011
44	Mr. Shirke, Officer, WRD, Shrigonda	27 March
45	Mr. Jadhav, Officer, WRD, Shrigonda	12 May, 2012
46	Damodar bhau, Canal inspector, Viladri	4 April, 2012
47	Canal Inspector,Vinaygaon, Zorebali	22 February, 2012
48	Chorekar bhau, Canal inspector, Uzalgaon	5 May, 2012
49	Official , MWRRA	10 June, 2012
50	Official , MWRRA	10 June, 2012
	Project level **(unless otherwise stated, all interviews were held between January and May, 2012)**	
51	Mr. Mahadev Navade, Viladri, Shrigonda	
52	Mr. Appa Navade, Viladri sugar factory, Shrigonda	
53	Mr. Nitin Navade, Viladri, Shrigonda	
54	Mr. Jagmohan Navade, Viladri, Shrigonda	
55	Mr. Sukharam Damodar, Viladri, Shrigonda	Balaji WUA
56	Mr. Jaisukh Baburao, Viladri, Shrigonda	
57	Mr. Vikas Narayan, Viladri, Shrigonda	
58	Mr. Bikaji Navade, Viladri, Shrigonda	
59	Mr. Bhaskar, Viladri, Shrigonda	
60	Mr. Ramsaras Chavan, Viladri, Shrigonda	
61	Mr. Baban Pawar, Dattewadi, Shrigonda	
62	Mr. Datta Damodar, Dattewadi, Shrigonda	
63	Mr. Shiv Narayan, Dattewadi, Shrigonda	
64	Mr. Takaram Chaoule, Dattewadi, Shrigonda	
65	Mr. Gulabrao Sangaonkar, Dattewadi, Shrigonda	
66	Mr. Ganpat Parekh, Phoolwadi, Shrigonda	Triveni WUA
67	Mr. Vikas Britekar, Phoolwadi, Shrigonda	
68	Mr. Govind Khamkar, Phoolwadi, Shrigonda	
69	Mr. Vitthal Navade, Phoolwadi, Shrigonda	
70	Mr. Vishwasrao, Dattewadi, Shrigonda	
71	Mrs.Shyama Navade, Viladri, Shrigonda	
72	Mr. Madhavrao Khamkar, Vinaygaon, Shrigonda	
73	Mr. Appa sahib, Vinaygaon, Shrigonda	
74	Mr. Siddharth Khamkar, Vinaygaon, Shrigonda	Sangam WUA
75	Mrs. Gangu *tai*,Vinaygaon, Shrigonda	
76	Mrs Savita Gawde, Uzalgaon, Karjat	
77	Mr, Kishan Sastay, Karjat	
78	Dr. Harsh Gawde, Uzalgaon, Karjat	JGP WUA
79	Mrs. Harsh Gawde, Uzalgaon, Karjat	
80	Mr. Vitthal Sudrik, Uzalgaon, Karjat	
81	Mr. Sanjay Gawde, Uzalgaon, Karjat	
82	Mr. Shiv Narayan Sopore, Uzalgaon, Karjat	
83	Primary school teacher, Uzalgaon, Karjat	
84	Professor sahib, Uzalgaon, Karjat	
85	Mr. Ginoji, Uzalgaon, Karjat	
86	Mr. Sukhdev Bhoram, Uzalgaon, Karjat	
87	Mr. Rahul Kadam, Uzalgaon, Karjat	

88	Mr. Mukesh Kadam, Uzalgaon, Karjat		
89	Mr. Anil Gawde, Uzalgaon, Karjat		
90	Mr. Rajnikant Parkhe, Uzalgaon, Karjat		
91	Mr. Mahendra Parkhe, Uzalgaon, Karjat		
92	Mr. Kalyan Gawde, Uzalgaon, Karjat		
93	Mr. Ankur Gawde , Uzalgaon, Karjat		JGP WUA
94	Mrs.Vimla Gawde, Uzalgaon, Karjat		
95	Panchayat member, Uzalgaon, Karjat		
96	Mr. Vishnu Babban Bhonsle, Uzalgaon, Karjat		
97	Mr. Haribhai Gawde, Uzalgaon, Karjat		
98	Mr. Eknath Gawde, Uzalgaon, Karjat		
99	Mrs. Chanchal Gawde, Uzalgaon, Karjat		
100	Mr. Ganesh Sastay, Uzalgaon, Karjat		
101	Mr. Hanuman Sastay, Uzalgaon, Karjat		
102	Mr. Ramdas Gawde, Uzalgaon, Karjat		
103	Mr. Nanasaheb Gawde, Uzalgaon, Karjat		
104	Farmer on Lift Irrigation, Deluwadi, Karjat		
105	Mr. Arun Sudrik, Deluwadi, Karjat		
106	Farmer on Lift Irrigation, Deluwadi, Karjat		
107	Mr. Thorate, Deluwadi, Karjat		
108	Mr. Subhash Chauhan, Zorebali, Shrigonda		
109	Mr. Narayan Dangab, Pimpegaon, Shrigonda		
110	Mr. Rao Pawar, Ryat		
111	Mr. Datter Pundikar,Nagpur		
112	Prerna coordinator, Uzalgaon, Shrigonda		
113	Mr. Sanjay Bhonsle, Prerna, Pune		27 July, 2012
114	Mr.Raman, Prerna , Pune		27 July, 2012
115	Mr. Madhav, Prerna, Uzalgaon, Shrigonda		
116	Mrs. Sudha, SPK		18 January, Rahuri

11.3 List of the World Bank documents

S.No	Name of the document	Year
1	Irrigation Sector Review	1991
2	Water Resources Management Policy: A World Bank Policy Paper	1993
3	World Bank: Economic developments in India: achievements and challenges	1995
4	Initiating and Sustaining Water Sector Reforms: A Synthesis	1998:
5	The Irrigation Sector Review	1998
6	Inter-Sectoral Water Allocation, Planning and Management	1998
7	Water Challenges and Institutional Reform: a cross- country perspective	1999
8	India: World Bank Assistance for Water Resources Management: A County Assistance Evaluation	2002
9	Institutional Reform Options in the Irrigation Sector	2004
10	India's Water Economy: Bracing for a Turbulent Future	2005
11	Maharashtra Water Sector Improvement Project: Project Appraisal Document	2005
12	Handbook of Water Resources in India: Development, Management, and Strategies	2007

11.4 Selected Provisions of the Reform Acts

11.4.1 MWRAA Act, 2005(Selected Provisions)

Section 11. The Authority shall exercise the following powers and perform the following functions, namely:-

(a) to determine the distribution of Entitlements for various Categories of Use and the equitable distribution of Entitlements of water within each Category of Use on such terms and conditions as may be prescribed;

(b) to enforce the decisions or orders issued under this Act;

(c) to determine the priority of equitable distribution of water available at the water resource project, sub-basin and river basin levels during periods of scarcity;

(d) to establish a water tariff system, and to fix the criteria for water charges at basin, river basin and State level after ascertaining the views of the beneficiary public, based on the principle that water charges reflect the full cost recovery of the cost of irrigation management, administration, operation and maintenance of water resources project;

(e) to administer and manage inter-state water resources apportionment on river systems, of the State;[…]

(h) to lay down the criteria for modification in Entitlements for the diversion, storage and use of surface and sub-surface waters of the State;[…]

(o) to establish a system of enforcement, monitoring and measurement of the Entitlements for the use of water to ensure that the actual use of water, both in quantity and in type of use are in compliance with the Entitlements as issued by the Authority

Section 12 (7) The Authority shall ensure that the principle of "tail to head" irrigation is implemented by the River Basin Agency[…]

(11) Notwithstanding anything contained in this Act, a person having more than two children shall be required to pay one and a half times of the normal rates of water charges fixed under clause (d) of section 11 to get entitlement for water for the purpose of agriculture.

Section 14 (2) Use of water for the purposes of agriculture, through any existing bore well or tube well or other well in the command area of the project on the date of commencement of this Act, shall be allowed to continue till such date as may be notified by the Authority.

(3) There shall not be any restriction on digging of any bore well, tube well and other well in the command area of a project, till such date as may be notified by the Authority

Section 22 (1)The Government shall by special order issued in this behalf authorise any competent officer or officers for each River Basin Agency as Primary Dispute Resolution Officer, to resolve the disputes regarding the Issuance or delivery of water entitlement under the Act.

11.4.2 MWRRA (Amendment and Continuance Act), 2011

Section 3. In section 11 of the principal Act-

1) for clause (a), the following clause shall be substituted, namely:-
"(a) to determine the criteria for the distribution of Entitlements by the River Basin Agencies, within each Category of Use, on such terms and conditions as may be prescribed, after sectoral allocation is made under section 16A;"

Section 5. After section 16 of the principal Act, the following section shall be inserted, namely:-

"**16A**. (1) Notwithstanding anything contained in section 11 or any other provisions of this Act or in any other law for the time being in force, the State Government shall determine sectoral allocation:

(2) After the sectoral allocation, as provided in sub section (1) is determined, The Authority shall determine the criteria for distribution of Entitlements under clause (a) of section 11".

Section 6. After section 31 of the principal Act, the following sections shall be inserted, namely:-

31A. Notwithstanding anything contained in this Act or any other law for the time being in force, the term "Entitlement" shall apply only to such areas where compliance of all relevant provisions including delineation under the Maharashtra Management of Irrigation System by Farmers Act, 2005 is made.

31B. Notwithstanding anything contained in this Act or in any other law for the time being in force, or in any order, judgment or decree of any court, tribunal or authority, any person or Water User Entity to whom permission , allocation, sanction, authorization or Entitlement of water has been granted by the High Power Committee or the River Basin Agency or the State Government, prior to the 17th September, 2010, being the date of commencement of section 1of the Maharashtra Water Resources Regulatory Authority (Amendment and Continuance) Act, 2011, shall be deemed to have been granted, in accordance with the provisions of this Act and accordingly the same shall continue an no such person or Water User Entity shall be required to obtain fresh permission, allocation, sanction, authorization or Entitlement to draw water.

11.5 The non-irrigation allocation in the Jahot canal system

No.	Name of the Agency	Purpose	Source of Supply	Yearly sanctioned Water Quota (M.Cum)
1	Shrigonda Municipality, Shrigonda	Domestic	GLBC Canal	0.547
2	Pimpegaon Gram panchayat	Domestic	GLBC Canal	0.15
3	MIDC Ranjangaon	Industrial	Jahot Backwater	0.45
4	Jahotganga SSK Ltd.	Domestic Industrial	Jahot Backwater	0.06 1.10
5	Shirur Municipality, Shirur	Domestic	Jahot Backwater	1.220
6	Executive Engineer, Gramin Paani puravatha (Zilla Panchayat, Pune)	Domestic	Jahot Backwater	0.431
7	Ashpa Board Pvt. Limited	Industrial Domestic	Jahot Backwater	0.046 0.06
8	Shrigonda Sugar Cooperative Ltd.	Industrial	GLBC	1.040

Source:(Government of Maharashtra, 2006b)

11.6 Illustrative example for calculation of entitlements

(ILLUSTRATIVE EXAMPLE)
Prescribed Unit Water Use Entitlement for Flow Irrigation in Rabi and H.W. season

1)	Utilisation for Rabi and H.W.season - Total utilisation (planned) - Deduct planned utilisation in Kharif	154.8	Mm^3 Mm^3
	Net for Rabi and H.W.	154.80	
2)	Deduct from (1) i) Reduction in the live storage due to siltation (assumed) ii) Carry over iii) Net losses from reservoir considering post monsoon flow iv) Net river losses in case of storage cum pick-up weir scheme (Not applicable in this case) v) Non-irrigation requirement from reservoir vi) Non-irrigation requirement from canal system (1.737 / (0.80 x 0.80) = 2.741 vii)Water allocation for bulk consumers (Block system where applicable)	 19.36 35.89 3.749 2.714 13.325	 Mm^3 Mm^3 Mm^3 Mm^3 Mm^3
	Total deductions :	75.038	Mm^3
3)	Water available for irrigation at canal head in Rabi & H.W. seasons i.e. (1 – 2)	79.762	Mm^3
4)	Deduct from (3) i) Water Allocation for lift and pressurized irrigation schemes on reservoir. (Lift / Drip / Total: Rabi 6.71 / 2.90 / 9.61 Mm^3; Hotweather 0.15 / 1.35 / 1.50 Mm^3; Total 6.86 / 4.25 / 11.11 Mm^3) ii) Water Allocation at canal head for lift and pressurized irrigation schemes on canal (4.126/0.80) (Refer Table-I) Rabi 3.936 Mm^3, Hotweather 0.15 Mm^3, Total 4.126 Mm^3 iii)Water Allocation for lift and pressurized irrigation schemes on river between dam and pick up weir. (For K.T. Weirs) (Rabi / Hotweather / Total: (Within Command) 2.81 / 4.75 / 7.56; (Outside Command) 1.97 / 2.48 / 4.45; Total 4.78 / 7.23 / 12.01)	11.11 5.157 12.01	Mm^3 Mm^3 Mm^3
		28.277	
5)	Net water available for flow irrigation at head of WUA (79.762 – 28.277) x (0.80 x 0.80) efficiency from canal head to minor head (Refer Table – I) =	32.950	Mm^3
6)	Seasonwise allocation of net water available for flow irrigation Rabi (53%) = 17.464 Mm^3 H.W. (47%) = 15.516 Mm^3	 17.464 15.516	 Mm^3 Mm^3
7)	Net CCA for flow irrigation - Total CCA 32494.00 ha. - Deduct CCA of block Consumers = 1053.00 ha. - Lift on KT Weir = 724.00 ha. - Canal Lift = 1126.00 ha Total Deduction = 2903.00 ha Net CCA 29591.00 ha.		0.00314
8)	Prescribed unit water use entitlement per ha of Net CCA (i.e. 6/7) Rabi 590.18 m^3/ha of Net CCA 17464000/29591 H.W. 524.35 m^3/ha of Net CCA 15516000/29591	 590.18 524.35	 M^3/Ha. M^3/Ha.

Source: MWRRA, Mumbai (Government of Maharashtra, 2007).

****